THE LANCET

Offices: 7, ADAM STREET, ADELPHI, W.C.2

Telegrams: LANCET, RAND, LONDON. Telephone: TEMPLE BAR 7228 and 7229.

No. XXI., OF VOL. II., 1935. LONDON, SATURDAY, NOVEMBER 23, 1935 Pp. 136—Price 1s.
No. 5856. VOL. CCXXIX. Founded 1823. PUBLISHED WEEKLY. Registered as a Newspaper. Annual Subscription: Inland £2 2s. Abroad £2 10s.

By EDWIN L. HOPEWELL-ASH, M.D.

MANIPULATIVE METHODS IN THE TREATMENT OF FUNCTIONAL DISEASE.

OUTLINE OF TECHNIQUE—SUITABLE CASES—RESULTS.

John Bale, Sons & Danielsson, Ltd. Price 3s. 6d.

PROBLEMS OF

ANÆSTHESIA IN GENERAL PRACTICE

By D. H. LUKIS, M.D., B.S. Lond.

Late Hon. Anæsthetist, South London Hospital; late Clinical Assistant, Ear, Nose, and Throat Department, Queen's Hospital for Children, and Hon. Medical Officer, Kingston Victoria Hospital.

Demy 8vo. 7s. 6d. net (postage extra). 158 + vi pages.

Hodder & Stoughton, Ltd. (Medical Publications), Warwick-square, E.C.4.

FRACTURES.

By MEURICE SINCLAIR, C.M.G., M.B., CH.B. (EDIN.). With an Introduction by Sir ROBERT JONES, Bt., F.R.C.S. Pp. 550. 337 X ray photographs, photographs and diagrams. 24s. net.

Constable & Co, Ltd., London.

THE PREVENTIVE ASPECTS of MEDICINE

A SERIES OF TWENTY-FIVE LECTURES DELIVERED AT KING'S COLLEGE HOSPITAL MEDICAL SCHOOL WINTER SESSION 1933–4.

"... The facts given are reliable and the views expressed are abreast of the times."—BRITISH MEDICAL JOURNAL.

364 pages. Demy 8vo. Price 10s. 6d. net. (Postage extra: Inland 6d.; abroad 9d.)

The Lancet Limited, 7, Adam-street, Adelphi, London, W.C.2.

KÖHLER'S RÖNTGENOLOGY.

SECOND ENGLISH EDITION. Pp. xvi + 682 with over 400 illustrations.

The latest and most up-to-date book in any language, containing numerous improvements to the current German Edition specially introduced by Professor KÖHLER. Revised by Dr. TURNBULL with the aid of Prof. WOODBURN MORISON and Prof. JAMES T. CASE, this edition contains 130 more pages and 76 more illustrations than the previous edition.

Price 50s. Postage 9d.; abroad, 1s. 9d.

Baillière, Tindall & Cox, 7 & 8, Henrietta-street, London, W.C.2.

OESOPHAGEAL OBSTRUCTION:

ITS PATHOLOGY, DIAGNOSIS AND TREATMENT (including four chapters on Cancer of the Œsophagus).

By A. LAWRENCE ABEL, M.S. Lond., F.R.C.S. Eng., Assistant Surgeon to the Cancer Hospital, &c.

Pp. 245. 132 Illustrations. 2 Col. Plates. 30s. net.

"Masterful and complete. . . Cannot be too highly praised." —SURG. GYN. AND OBSTET. JOUR.

Oxford University Press, Amen House, London, E.C.4.

NOW READY.

WOMAN

AN HISTORICAL, GYNÆCOLOGICAL AND ANTHROPOLOGICAL COMPENDIUM.

By H. PLOSS & M. and P. BARTELS.

Edited by E. J. DINGWALL.

Crown 4to. With more than 1000 illustrations in black and white and seven colour plates. Buckram binding. Three volumes. Eight guineas per set.

Wm. Heinemann (Medical Books) Ltd., 99, Great Russell-street, London, W.C.1.

JUST PUBLISHED

EUSTERMAN & BALFOUR

ON

STOMACH AND DUODENUM

See Saunders' Advertisement on Page 5.

PROGNOSIS.

VOLUME ONE.

Price 10s. 6d. net (postage 6d. extra).

Companion Volumes to the "Modern Technique in Treatment" and "Clinical Interpretation of Aids to Diagnosis" Series.

The first 66 articles of this series have been collected in book form. The Volume comprises 384 Demy Octavo pages, and is fully indexed under titles, authors, and broadly classified into groups to facilitate quick reference.

The Lancet Limited, 7, Adam-street, Adelphi, London, W.C.2.

DISEASES OF THE THYROID GLAND.

WITH SPECIAL REFERENCE TO THYROTOXICOSIS.

By CECIL A. JOLL, M.S., B.Sc., F.R.C.S. (Eng.).

Crown 4to. Fully Illustrated. £3 3s. net.

"No praise is too high for the author of this great book. It must be considered as the standard work on thyroid disease. Its pages summarise all that is known of this most interesting subject at the present day."—WEST LONDON MEDICAL JOURNAL.

William Heinemann (Medical Books) Ltd., 99, Great Russell-street, London, W.C.1.

THE CLINICAL INTERPRETATION OF AIDS TO DIAGNOSIS.

Vols. I and II. Price 10s. 6d. each. Postage extra.

Volume I.—"Each of the 45 Sections included in the book is contributed by an experienced worker. . . ."

Volume II.—"We may say that the success of the first volume is here repeated. . . ."—BRITISH MEDICAL JOURNAL.

"Physicians and surgeons cannot afford to omit the knowledge here outlined. . . ."—BIRMINGHAM MEDICAL REVIEW.

London: THE LANCET LTD., 7, Adam-street, Adelphi, W.C.2.

Five New Books

THIRD EDITION. 14 Plates and 85 Text-figures. 12s. 6d.

RECENT ADVANCES IN CARDIOLOGY

By TERENCE EAST, D.M., F.R.C.P., Physician, King's College Hospital. & CURTIS BAIN, *M.C.*, D.M., M.R.C.P., Physician, Harrogate General Hospital.

ESSENTIALS OF CARDIOGRAPHY

By H. B. RUSSELL, M.D., M.R.C.P. 73 Illustrations. 7s. 6d.

DISORDERS OF THE BLOOD

By L. E. H. WHITBY, *C.V.O.*, M.D., F.R.C.P., and C. J. C. BRITTON, M.D. 12 Plates (8 Coloured) and 53 Text-figures. 21s.

RECENT ADVANCES IN LARYNGOLOGY AND OTOLOGY

By R. SCOTT STEVENSON, M.D., F.R.C.S.E. 128 Illustrations, including 13 Plates. 15s.

ANTENATAL AND POSTNATAL CARE

By F. J. BROWNE, M.D., F.R.C.S.E. 58 Illustrations. 15s.

J. & A. CHURCHILL Ltd., 40 Gloucester Place, LONDON W.1

Dyspepsia after Tea!

Here is one of the many hundreds of Medical testimonials as to the value in Dyspepsia of **"Ty.phoo"** tea, with its rich mild "leaf-edge" preponderance.

"I have recommended 'Ty.phoo' to several of my patients suffering from dyspepsia with good results, and shall continue to recommend it whenever it is indicated."

A large free sample of "Ty.phoo" tea will be posted to any practitioner who has not tried it.
(This offer applies only to the British Isles).

Over 18,000 Doctors are direct purchasers of this tea from us.
Sumner's **"Ty.phoo"** Tea, Ltd., *Medical Dept. L.*, Birmingham, 5.

LESLIES ZŌPLA STRAPPING
(Zinc Oxide Plaster)

Powerful grip—no slipping

Thoroughly pliable

Consistently good

Strong White and Flesh Cloths, White Felt, etc. Samples on request

ZŌPLA—BAND
(Elastic Plaster Bandage)

Excellent for varicose veins, ulcers, sprains, etc., and where an elastic cloth is desirable

All widths from 1 inch

Cream and Flesh colour

Manufactured by LESLIES LTD., Higham Hill Road, Walthamstow, London, E.17
Telephone: LARkswood 1342

BRONCHOSPASM AND ASTHMA

A booklet surveying this subject, which includes diagrams and illustrations, has recently been published and has been sent to all members of the Medical Profession. You are invited to send for a copy should this have failed to reach you.

"THE LANCET" writes (28/4/34, p. 929):—

"We have received a pamphlet on 'Bronchospasm and Asthma,' written to bring before the medical profession the value of Felsol in the treatment of asthmatic subjects. The powders can be prescribed by the medical man in accordance with the definite régime which he decides to adopt in the treatment of a case, the claim for felsol being that its administration relieves promptly the attack of asthma by its influence over bronchial spasm, so that only the most severe cases would require the injection of morphia."

Telephone: Museum 2855

BRITISH FELSOL COMPANY LTD.
15, Caroline Street, London, W.C.1

Telegrams: Felsol, Westcent, London

NOVEMBER 23, 1935

THE LANCET

A JOURNAL OF BRITISH AND FOREIGN MEDICINE, SURGERY, OBSTETRICS, PHYSIOLOGY, CHEMISTRY, PHARMACOLOGY, PUBLIC HEALTH, AND NEWS

No. 5856 LONDON, SATURDAY, NOVEMBER 23, 1935 CCXXIX

CONTENTS

THE WHOLE OF THE LITERARY MATTER IN THE LANCET IS COPYRIGHT

ADDRESSES AND ORIGINAL ARTICLES

Integration of the Endocrine System. By Sir W. LANGDON-BROWN, F.R.C.P. 1155

The Value of Gastroscopy. By H. C. EDWARDS, F.R.C.S.—(*With Coloured Plate*)..... 1161

Cysts of the Semilunar Cartilage of the Knee. By JOHN P. HOSFORD, F.R.C.S.—(*Illustrations on Plate*)..... 1166

Incidence of Congenital Abnormalities in the Genito-urinary Tract. By I. B. BARCLAY, M.R.C.S., D.M.R.E., and J. B. BAIRD, F.R.C.S.—(*Illustrations on Plate*).. 1169

"Cambridge Electrode Jelly." By H. B. RUSSELL, M.R.C.P.—(*Illustrated*)..... 1172

CLINICAL AND LABORATORY NOTES

Double Pyosalpinx due to Salmonella Newport Infection. By DOROTHY BROWN, M.B..... 1173

Intussusception due to Invagination of a Meckel's Diverticulum. By G. DUNCAN, M.B. 1174

Torsion of the Spleen associated with Rupture. By Y. CANTIN, M.R.C.S. 1175

Death Following Perforation of Stercoraceous Ulcer. By J. J. O'REILLY, M.B. 1175

MEDICAL SOCIETIES

Royal Society of Medicine: Epidemiology and Tropical Diseases: Malaria Epidemic in Ceylon.... 1176

Medical Officers of Schools Association: Problems of the M.O. in Private Preparatory Schools... 1177

North-Western Tuberculosis Association: Adult Pulmonary Tuberculosis 1179

Hunterian Society: Birth Control 1180

REVIEWS AND NOTICES OF BOOKS

Biology of the Individual. Edited by J. R. Hunt, M.D., and others..... 1182

Introduction to General Therapeutics. By H. K. Fry, M.D..... 1182

Autonomic Nervous System. By J. C. White, M.D..... 1182

Tumeurs de l'encéphale. By D. Paulian..... 1183

Diseases of the Nervous System. By S. E. Jelliffe, M.D., and W. A. White, M.D..... 1183

John Bellers. By A. Ruth Fry..... 1183

Introduction à la chirurgie thoracique. By E. E. Lauwers 1184

Nouveau traité de médecine. By Prof. G. H. Roger and others..... 1184

Handbook of Physiology. By the late Prof. W. D. Halliburton, F.R.C.P., F.R.S., and Prof. R. J. S. McDowall, F.R.C.P. 1184

Tuberculosis of the Lymphatic System. By R. H. Miller, F.A.C.S..... 1184

LEADING ARTICLES

TEACHING OF MEDICAL PSYCHOLOGY 1185

TREATMENT OF CANCER OF THE LARYNX..... 1186

CHARLATANISM..... 1186

SLEEP AND SLEEPLESSNESS 1187

ANNOTATIONS

A New Source of Hormones 1189

Some Social and Psychological Implications of Illness 1189

Sunnier Electric Light.... 1189

The Gordon Syndrome... 1190

For and Against Doctors.. 1191

Anatomy at St. Thomas's. 1191

A Year's Work on Asthma 1191

Radium Protection by Building Materials..... 1192

The Irradiated Cell..... 1192

Voluntary Hospital Policy 1193

PROGNOSIS

LXXVIII.—Prognosis of Ulcerative Colitis. By ARTHUR F. HURST, F.R.C.P. 1194

SPECIAL ARTICLES

British Medical Association:

Diseases of Children: Pink Disease—Intussusception..... 1196

Radiology and Radiotherapeutics: Radiographic Diagnosis in Diseases of Lungs..... 1198

Medicine in the Colonies.. 1200

Medicine and the Law: The Practitioner's Right to his own Name—Fine for Unlawful Description as "Manipulative Surgeon"..... 1201

Medical Men in Parliament.—(*With Portraits*) 1202

Ireland: Proposed Pension Scheme for Nurses 1204

Buckston Browne Dinner: Royal College of Surgeons of England 1204

The Quetta Earthquake: List of Awards 1211

Infectious Disease in England and Wales ... 1206

CORRESPONDENCE

Resection for Carcinoma of the Sigmoid and Sigmoid Rectum (Mr. J. P. Lockhart-Mummery, F.R.C.S.) 1207

Skin Tests for Whooping-cough (Dr. Donald Paterson) 1207

"Kwashiorkor" (Dr. H. S. Stannus) 1207

Delayed Lactation (Dr. W. B. Crawford) 1208

A Kind Thought (Dr. L. G. Glover) 1208

PANEL AND CONTRACT PRACTICE

Compromising Silence.—The Thumb which Went Wrong 1206

OBITUARY

Charles Hermann Tattersall, M.R.C.S. 1208

George wilson Burn, M.R.C.S. 1209

THE SERVICES

Royal Naval Medical Service.—Royal Army Medical Corps.—Royal Air Force.—Indian Medical Service.—Colonial Medical Service 1205

MEDICAL NEWS

University of Cambridge . 1209

Royal Society 1209

Acton Hospital..... 1175

Post-graduate Courses in Berlin 1181

Harveian Society 1209

Birmingham General Hospital.. 1209

Roy. Coll. Surg. Eng. 1210

Brit. Coll. Obstet. and Gynæcol. 1210

Roy. Fac. Phys. and Surg., Glasg. 1210

Roy. Sanitary Inst. 1210

Med. Soc. of Individual Psychology 1210

Central Housing Advisory Committee 1211

Battersea Gen. Hosp. 1211

NOTES, COMMENTS, AND ABSTRACTS

The American Maternity Hospital. By K. Vernon Bailey, M.R.C.P., M.C.O.G. 1213

Applications of Psychology to Medicine 1215

The Medical Practitioner as Patriot 1215

"It All Depends..."..... 1215

Neither Jew nor Gentile 1216

Medical Diary 1211

Appointments 1212

Births, Marriages, Deaths 1212

Vacancies 1216

JOHN BALE, SONS & DANIELSSON, LTD.

PRACTICAL POINTS IN EYE SURGERY & DRESSING. By HUGH E. JONES, M.R.C.S., L.R.C.P. Post free 2s. 9d.
"This little book can be thoroughly recommended."—MED. PRESS.

THE PRINCIPLES OF ANTE-NATAL AND POST-NATAL CHILD HYGIENE. By W. M. FELDMAN, M.D., B.S., M.R.C.P. (Lond.), F.R.S. (Edin.). With 161 Illustrations and 14 Plates, including over 100 Portraits. 25s. net; post free 25s. 9d.
"... will interest alike pædiatric physicians, lay workers at infant welfare centres, students of antenatal care and welfare, and all concerned with the well-being of children. The general practitioner will find in it answers to the innumerable questions of young parents...."—B.M.J.

"THE CONJOINT FINALS." Second Edition. Being a Reproduction of all the Questions set in Medicine, Surgery, and Midwifery from 1911 to 1932, classified under the various systems. By G. N. BEESTON, M.R.C.S. (Eng.), L.R.C.P. (Lond.). Post free 6s. 6d.
"The scope is sufficiently wide to render it of value to anyone about to sit for any examination for medical qualifications."—LANCET.

PSYCHIATRY FOR NURSES. A Series of Lectures. By LOUIS MINSKI, M.D., M.R.C.P., Medical Officer, Maudsley Hospital, Denmark Hill, S.E. Post free 2s. 9d.

A COMPENDIUM OF THE PHARMACOPŒIAS AND FORMULARIES (Official and Unofficial) with Practical Aids to Prescribing and Dispensing. 1933.
By C. J. S. THOMPSON, M.B.E. Pp. ix + 381. Flexible leather, red edges, gold lettered. 10s. 6d. net; post free 11s. 3d.
A Handy Pocket Book of Reference for Medical Practitioners and Pharmacists. Seventh Edition, brought up to date and revised. With an Epitome of the Dangerous Drugs Acts, 1920 and 1923, and a Summary of Regulations affecting Pharmacists.

AN ATLAS OF SKIN DISEASES IN THE TROPICS. By E. C. SMITH, B.A., M.D. (Dublin), D.P.H., D.T.M. & H. (Eng.). 21s. net; post free inland 21s. 9d., abroad 22s. 6d.
"The book is a real treasure."—LANCET.
"Should be in the hands of those who are likely to work in the Tropics, and will be found of great interest to all dermatologists."—BRIT. MED. JOUR.

83-91, GREAT TITCHFIELD ST., LONDON, W.1

CASSELL BOOKS FOR STUDENTS AND PRACTITIONERS

TENTH EDITION *JUST PUBLISHED*

Manson's Tropical Diseases

Edited by **PHILIP H. MANSON-BAHR,** D.S.O., M.A., M.D., D.T.M. & H. Cantab., F.R.C.P. Lond.

Physician to the Hospital for Tropical Diseases, London, the Albert Dock Hospital, and the Tilbury Hospital ; Consulting Physician to the Colonial Office and Crown Agents for the Colonies, etc.

New (tenth) Edition, thoroughly revised and entirely reset. With many new illustrations, including teaching plates of intestinal and blood protozoa.

Demy 8vo, 1004 pages. With 22 Coloured Plates, 15 Half-tone Plates, 381 Figures in the Text, 6 Maps, and 38 Charts. Price **31s. 6d.**

NEW WORK

The Rheumatic Diseases

Their Recognition and Treatment

By FRANCIS BACH, M.A., M.D. (Oxford)

Chief Assistant at St. Bartholomew's Hospital and the British Red Cross Society's Clinic for Rheumatism : Physician, St. John Clinic and Institute of Physical Medicine ; Member Royal College of Physicians' Committee on Chronic Rheumatic Diseases.

"To be warmly recommended to all the younger teachers of medicine, to the budding physicians, and especially to those who feel specially drawn to the problems of rheumatism."—LANCET.

Demy 8vo, 448 pages. With 12 Plates and 26 Text Illustrations. Price **12s. 6d. net.**

AN INTRODUCTION TO GENERAL THERAPEUTICS

By **H. K. FRY,** D.S.O., B.Sc., M.D., D.P.H., Lecturer in Materia Medica and Therapeutics in the University of Adelaide. A concise and skilfully summarized survey of all modern methods of treatment, dealing with the principles underlying their use.

Crown 8vo, 224 pages. **6s. net.**

MATERIA MEDICA AND THERAPEUTICS

By **WALTER J. DILLING,** M.B., Ch.B. Aberd. This popular handbook has been entirely rewritten since the appearance of the new British Pharmacopœia in 1932.

Fourteenth Edition. Foolscap 8vo, 700 pages. **10s. 6d. net.**

PULMONARY TUBERCULOSIS : MEDICAL AND SURGICAL TREATMENT

By **H. MORRISTON DAVIES,** M.A., M.D., M.Ch. Cantab., F.R.C.S. Eng. This recently published work is a comprehensive guide to all forms of treatment.

Demy 8vo, 464 pages. 77 Radiographic Plates and 69 Half-tone and Line Text figures. **27s. 6d. net.**

SICK CHILDREN : DIAGNOSIS AND TREATMENT

By **DONALD PATERSON,** B.A., M.D., F.R.C.P. Lond. A concise manual for students and practitioners.

Crown 8vo, 542 pages. With 16 Half-tone Plates and 85 Text-figures. **16s. net.**

DISEASES OF THE SKIN

By **S. ERNEST DORE,** M.D., F.R.C.P. Lond., and **JOHN L. FRANKLIN,** M.D., M.R.C.P. Lond.

Crown 8vo, 420 pages. With 46 Half-tone Plates. **10s. 6d. net.**

MODERN MEDICAL TREATMENT

By **E. BELLINGHAM-SMITH,** M.D., F.R.C.P. Lond., and **ANTHONY FEILING,** M.D., F.R.C.P. Lond. With an Introduction by **Sir HUMPHRY ROLLESTON,** Bart., G.C.V.O., K.C.B.

Two Volumes. Demy 8vo. 1432 pages. **30s. net the Set.**

INJECTION TREATMENT IN MEDICAL PRACTICE

By **DAVID LEVI,** M.B., M.S., F.R.C.S. Eng. A Practical Guide to the Ambulatory Treatment of Piles, Prolapse of the Rectum, Varicose Veins, Hydrocele, Varicocele, Bursæ, Neuritis, Neuralgia, etc.

Demy 8vo. 158 pages. With 26 Illustrations. **6s. net.**

CASSELL & Co., Ltd., LA BELLE SAUVAGE, LONDON, E.C.4

ADDRESSES AND ORIGINAL ARTICLES

INTEGRATION OF THE ENDOCRINE SYSTEM *

BY SIR WALTER LANGDON-BROWN, M.D. Camb., F.R.C.P. Lond.

EMERITUS PROFESSOR OF PHYSIC IN THE UNIVERSITY OF CAMBRIDGE, AND CONSULTING PHYSICIAN TO ST. BARTHOLOMEW'S HOSPITAL

IN 1894 Horsley was awarded a medal by the Royal Society "for his investigations relating to the physiology of the nervous system, and of the thyroid gland." These were, of course, two separate lines of inquiry, but my purpose to-day is to show how much more closely these two subjects are related than was imagined at that time.

Recent Lines of Advance

Three recent lines of advance are leading to a clearer conception of the integration of the endocrine system.

1. The diencephalon (particularly the part we were taught to call the hypothalamus) has been conclusively shown to be the nervous structure concerned with the expression of the emotions.
2. The pituitary, which is so closely associated with the diencephalon, has become recognised as the leader of the endocrine orchestra.
3. It is now realised that all nervous impulses have a chemical mediator between the neuron and the tissue cell, and indeed between one neuron and another.

DIENCEPHALON AND THE EXPRESSION OF THE EMOTIONS

From the experiments of Sherrington it has been known that if the higher parts of the brain be severed from the diencephalon in a dog, the animal responds to ordinary stimuli in an exaggerated way by an explosion of what he terms "sham rage." Cushing has reported similar explosions in a patient suffering from a cerebral tumour which similarly destroyed these connexions. The ravages of lethargic encephalitis on this part of the brain have not only damaged the statics of the body but have profoundly affected the temperament and behaviour of the victim.

In these instances we are dealing with partial lesions which no doubt have an irritative effect on the remainder. But in an extraordinary case under the care of Prof. Naish,[1] of Sheffield, a teratoma involving the whole of hypothalamus completely blotted out the normal expression of the emotions; in Hughlings Jackson's nomenclature, a destroying rather than a discharging lesion.

A girl, aged 10, came under observation with the history of having been of an unusual temperament since birth. As an infant she used to sleep considerably longer hours than do most infants, and without moving. As she grew older it was noticed that she never showed joy, excitement, or fear, although she apparently felt fear, especially of loud noises, darkness, solitude, and certain persons. She would say she was afraid, but her expression and voice were calm. What was taken to be anger was shown by sudden refusal to comply with suggestions. She appeared to have strong feelings, but displayed none of the usual childish graces; her manners to chance callers were incorrigibly rude and she was very impenetrable to suggestion. All her life she was liable to sudden rises of temperature followed shortly by sudden falls. Her mental powers were good and she had an excellent memory. Her balance was never very good; when she tripped she seemed to have less than the usual powers of recovery and would fall flat on the floor. Three years before her death it was noticed that she was drinking heavily and passing large quantities of pale urine by day and by night; her appetite for solid food was poor and she was wasting, and not growing at all. The polyuria continued till about five weeks before death and then ceased somewhat abruptly. There was no sugar in the urine. Her emotional reactions were further diminished; she never shed a tear. Some three or four weeks before her death she found herself unable to walk, surmised that she was going to die, and said in an indifferent tone "Well, we can't help it." She appeared to feel the cold intensely, and was apt to huddle in front of a big fire. This feeling of cold increased until some two or three weeks before death when it ceased abruptly. She began to fall asleep in unusual places. Her powers of vision were lost apparently quite rapidly about five weeks before her death.

On admission she was remarkably drowsy. The pupils were equal and reacted normally. No cranial nerve paralysis was found; the reflexes were normal. There was marked pallor of the central area of each optic disc. She became comatose and died a few days later.

At the post-mortem a firm tumour with a smooth lobulated surface was found projecting from the base of the brain in the hypothalamic region behind the optic chiasma. The body showed no other abnormality except for enlargement of the mesenteric glands with evidence of tuberculous infection. The pituitary gland appeared to be normal. Microscopically the tumour was a teratoma.

You will note that she had temporary symptoms presumably due to pituitary compression, such as polyuria, disturbances of temperature, and much drowsiness, but that the most striking feature was the blotting out of nearly all normal emotional expression.

My second point really contains two separate propositions.

ASSOCIATION BETWEEN THE DIENCEPHALON AND PITUITARY

The anatomist of the past, looking at the brain enclosed in bone, and joined by a narrow stalk to this small pituitary body also thus enclosed, like a brain in miniature, were struck with the idea of a little shrunken brain, which, as it were, responded to, or repeated, the actions of the big brain above. Modern research has shown that there is more in this idea than was supposed in the nineteenth century. Harvey Cushing gave a brilliant review in his Lister memorial lecture [2] of the relationship between this gland and the diencephalon lying immediately above it; he re-echoed the saying of Ridley in 1695 that "it seems in a manner almost impossible to treat of one independently of the other."

A clear-cut instance of inhibition of the secretion of pituitrin through emotional disturbance is provided by Leslie Pugh's observation on cows that refuse to yield their milk, either because the calf has been taken away or because they object to an individual dairyman. If she hears the blaring of the calf the mother may yield her milk, but either cause of her refusal can be overcome by an injection of pituitrin. The disturbance of her diencephalon inhibited the chemical stimulus to the expulsion of milk, but the injection of that stimulant cut under the nervous inhibition, and the milk had perforce to flow.

* Being the fifth Horsley memorial lecture (abbreviated), delivered at University College, London, on Nov. 19th, 1935. The full text of the lecture will be published later by the Cambridge University Press.

Diabetes insipidus has been referred by some observers to a hypothalamic lesion and by others to a pituitary one. It is generally admitted now that damage to either place or the stalk connecting them can have this effect. Since pitressin can reduce the secretion of water by a denervated kidney, it is clear that when a nerve lesion leads to polyuria it does so by interfering with the secretion of pitressin. Presumably nervous polyuria is a temporary functional condition of the same sort. Thus we may accept the view of a diencephalo-pituitary apparatus, in which the nervous apparatus can implement itself through the chemical secretions of the glandular portion. Moreover, as P. T. Herring has pointed out, this secretion may be diverted either into the hypothalamus or into the general circulation by a local vascular adjustment.

THE PITUITARY AS LEADER OF THE ENDOCRINE ORCHESTRA

Cushing some years ago laid down the principle that polyglandular syndromes had their primary focus in some pituitary disturbance. The close association between the pituitary and the other endocrine glands is now generally admitted. Facts have accumulated so rapidly, that in order to gain any clear impression of the present position it is necessary to be concise and rather dogmatic. We recognise three types of cell in the anterior pituitary: (1) the chromophobe which resists staining and is probably the parent cell of (2) the eosinophil, and (3) the basophil. An adenoma composed of chromophobe cells diminishes pituitary function. Fröhlich's syndrome of obesity of the limb-girdle type and genital hypoplasia was originally recognised in a case of this sort. But extreme obesity may also result merely from division of the pituitary stalk, either experimentally or by disease. Milder cases, occurring in the absence of an adenoma, may be attributed to a delay in the differentiation of chromophobe cells; puberty may be delayed but the outlook is not so serious. That the eosinophil cells are the source of a growth hormone can be definitely accepted. The experimental evidence as to the production of gigantism in rats, the clinical evidence derived from acromegaly and acromicry, and from Simmonds's disease both in children and in adults seem alike satisfactory, though Novak [3] maintains that this hormone has not yet been obtained free from all the others. The basophil cells became regarded as the source of the sex hormone after the researches of Evans and Simpson, and still more so after Cushing's description of the syndrome of pituitary basophilism.[4] We may accept the view that the growth and sex hormones are antagonistic, and that it is not until the latter gains the upper hand that puberty occurs, but as I hope to show later, there are strong reasons to doubt the basophil cells as the source of the sex hormone. The position with regard to gonadotropic hormones is involved. We must distinguish clearly between œstrogenic substances which can act directly in the absence of the ovaries and gonadotropic principles which act indirectly by exciting the production of œstrin in the ovary. The gonadotropic extracts in therapeutic use are obtained not from the pituitary but from the placenta or from pregnancy urine; their active principle is probably chorionic in origin. Although it is similar to, if not identical with the type which can be obtained by chemical treatment of the pituitary, there is an important difference in their physiological action. The one obtained from the pituitary can produce both maturation of the ovarian follicles and their subsequent luteinisation in an animal deprived of its own pituitary, while the chorionic one cannot do either under such conditions (Collip [5]). The contrast between the small amount of œstrogenic substance produced by the pituitary and the enormous amount of œstrin found in the placenta, whence it overflows freely into the urine during pregnancy, is highly suggestive of a catalytic agent acting on a large mass of substrate, or at any rate of a stimulating synergic mechanism. In other words, while we must admit the prime importance of the anterior pituitary in initiating the events of the reproductive cycle, the process suggests that it does so by calling into activity hormones formed in the gonadal apparatus itself. This seems all the more probable in view of its capacity to evoke a response in male and female alike. More surprising is the fact that though the primary sex hormones are not identical, even though chemically closely related, descent of the testes in cryptorchids has been repeatedly observed after the injection of the extract from pregnancy urine.

It is still a matter of dispute whether the maturation and the luteinisation of an ovarian follicle are excited by two distinct hormones from the anterior pituitary or by only one, which produces these two effects according to the stage of the cycle. Most observers now, except Collip, seem to incline to the latter view, which would harmonise with the general conception I am advancing.

After the recognition of the growth and sex hormones, claims for other hormones secreted by the anterior pituitary multiplied rapidly. The principal ones are as follows:—

The thyrotropic hormone.—The loss of the secretion of the anterior pituitary through disease or experimental extirpation is followed by atrophy of the thyroid with reduction of the basal metabolic rate, and these changes can be prevented by injection of an anterior pituitary extract. Such an extract can produce hyperplasia of the thyroid with exophthalmos and an increased basal metabolic rate, but the two last named cannot be produced in animals from which the thyroid has been removed.[6] We have here an experimental method of producing Graves's disease and as in Graves's disease the condition can be controlled by the administration of iodine. Such observations throw light on the emotional causation of hyperthyroidism. It has long been known that the thyroid has an abundant supply of sympathetic nerves, but as these appear to be purely vasomotor, and indeed vasoconstrictor in action, it was difficult to see how their stimulation could lead to thyroid hypertrophy. It is therefore tempting to attribute such enlargement to excessive production of the thyrotropic hormone in the pituitary under diencephalic stimulation. Harington, however, thinks that although the greatly increased rate of secretion by the gland in hyperthyroidism is probably due to some extrinsic stimulus and although the thyrotropic hormone has been shown to be such a potential cause, it is unlikely that anything so simple as the overproduction of this hormone can account for Graves's disease.

Parathyrotropic hormone.—The existence of this hormone has not yet been established, but the striking similarity of the decalcification and bone pains of pituitary basophilism and of hyperparathyroidism is suggestive, despite the fact that in the former the blood calcium is not increased as in the latter.

Diabetogenic hormone.—Houssay first found that if a dog is previously deprived of its pituitary, subsequent removal of its pancreas does not cause glycosuria. But if an anterior pituitary extract is injected the blood-sugar is raised and sugar appears in the urine. Houssay has recently obtained this blood-sugar raising principle from the urine and according to Wilder and Wilbur it acts by way of the adrenals on the liver. In this connexion it is of great interest that Hertz [7] found symptoms of von Gierke's disease in a pituitary dwarf, suggesting that the

non-utilisation of glycogen characteristic of that condition is due to a lack of Houssay's pituitary hormone. We are now realising the complexity of the endocrine-autonomic mechanism by which the blood-sugar level is maintained; a balance being struck between the agencies tending to depress it—i.e., the pancreas under the influence of the vagus, and those tending to raise it, i.e., both lobes of the pituitary, the thyroid and the adrenals acting with the sympathetic, while mid-brain and bulbar centres regulate the whole. Just as cerebral anæmia leads to a rise of blood pressure through peripheral vasoconstriction, and as increased hydrogen-ion concentration in the medulla leads to increased respiratory effort, so a fall of blood-sugar brings into play the mechanisms which raise it again. Conversely the intravenous injection of hypertonic glucose may so stimulate the other side of the balance that actual hypoglycæmia may follow.

The fact that this Houssay hormone acts much more rapidly if injected into the cerebro-spinal fluid is regarded by Lucke as evidence that it acts through the nervous centres and then presumably via the splanchnics on the adrenals. This is not unlike the view expressed by J. J. R. Macleod in the Herter lectures shortly before his death. Funk and others noting the marked ketonuria which occurs both with Houssay's extract and in von Gierke's disease claim to have isolated a separate *ketogenic principle*, differing from that which raises blood-sugar because it increases the lipoid content of the blood.

Lactogenic hormone.—It has long been recognised that the post-pituitary can influence the expulsion of milk from the mammary ducts, but it is now claimed that an anterior pituitary hormone, prolactin, stimulates the actual secretion, while œstrin is responsible for the unfolding of the mammary duct system.[8]

Adrenotropic hormone.—Here we are on rather securer ground. The close resemblance between pituitary and adrenal virilism, the fact that progeria was first referred to adrenal atrophy and now to atrophy of the pituitary, the association of anencephaly with incomplete development of the adrenals all point to some fairly close interaction. Experimentally injection of anterior pituitary extracts can produce marked adrenal hypertrophy. Among others, Broster and Vines and Lescher and Robb-Smith [9] have emphasised the great difficulty of determining whether in a case of virilism the primary lesion is in the pituitary or the adrenal. Indeed in proved cases of a pituitary basophil adenoma such as Parkes Weber's the adrenals showed hypertrophy.

THE RÔLE OF THE BASOPHIL CELLS

We are now in a position to come to closer grips with the questions—what is the function of the basophil cells and can we draw any conclusions therefrom which will throw light on the way in which the pituitary does its work? We were a little too ready to conclude that the syndrome of pituitary basophilism confirmed the idea that the sex hormone originated in the basophil cells. Woollard [10] was the first, as far as I am aware, to point out that if this were so, it would be unreasonable to suppose that in women virilism and decay of sexual function should follow excess of it. Injection of pituitary gonadotropic hormone produces nothing like pituitary basophilism, but may produce gonadal atrophy. Woollard envisages the basophil cells as the inhibitors of the acidophilic activities rather than as the source of the sex hormone. He thinks that the pituitary plays no part in sexual differentiation, but brings testis or ovary to structural differentiation and full endocrine activity. Lescher and Robb-Smith come to a similar conclusion, that the basophil cells are the source of some depressive inhibitory substance. Levy Simpson [11] also suggests that the basophil secretion is inhibitory on the homosexual glands, allowing the development of a latent heterosexual rudiment. Wright has reported an excess of the pituitary sex hormone in the urine of female patients with basophilism; Levy Simpson thinks it is the male sex hormone that is present. In any case clinical evidence of increased sexual activity in such patients is more than dubious.

Crooke [12] has described a characteristic hyaline change in the basophil cells in Cushing's syndrome, whether that syndrome be associated with basophilic adenoma or a neoplasm of the thymus or hyperplasia or a neoplasm of the adrenal cortex. He did not regard this as a degenerative change, but as an expression of altered physiological activity. In Addison's disease Crooke and Russell [13] found an extreme reduction in the pituitary basophil cells. They think this may be the cause of the low blood pressure and possibly of the hypoglycæmia; it is certainly in sharp contrast with the high pressure and hyperglycæmia found with basophilic adenomas. These authors, together with Evans,[14] have described two cases of such adenomas in which most of the characteristic symptoms of the syndrome were lacking, cardiovascular hypertrophy being the salient feature. Nevertheless, they are not prepared to go as far as Cushing in regarding essential hypertension as due to increase in the number of basophil cells. Broster and Vines regard an excess of fuchsin-staining material as the essential change in the adrenal cortical cells which produces virilism. This change may be absent in pituitary basophilism. The way in which a growth in the thymus gland, usually regarded as antagonistic to sexual development, may stimulate the basophilic syndrome adds to all these doubts concerning the sexual functions of the basophil cells.

In earlier days the number of "centres" located by the physiologist in the medulla around the fourth ventricle multiplied until they produced a revolt against the whole conception. That centres should exist ready-made for a contingency which might never arise throughout life was a reductio ad absurdum. In the same way the functions controlled by the anterior pituitary have multiplied until the existence of a separate hormone for each function has become almost incredible. It seems more probable that the somewhat violent chemical measures adopted to isolate these pituitary hormones even in only an approximately pure state have produced alterations in the basic products, as P. E. Smith [8] suggests. In the less complicated case of the thyroid Harington [15] believes that the molecule of the complete active secretion contains both thyroxine and diiodotyrosine, and that some linkage between them is ruptured during the hydrolysis necessary for the isolation of thyroxine. Surely something of the same sort is probable in the case of the pituitary. Thus its thyrotropic hormone is obtained by acid extraction, which may easily produce changes in chemical structure.

In view of these facts, this newer conception of the anterior pituitary producing an accelerating hormone in the eosinophil cells and an inhibitory one in the basophil cells seems a rational one—the functions and the staining reactions of these cells being alike diametrically opposed. One may regard the anterior pituitary as largely controlled by the diencephalon and putting down the loud or soft pedal, as it were, on the other glands.

Fresh light on the whole subject has been thrown by Dodds [16] who classifies hormones under two headings. The first are complex protein bodies formed by the anterior pituitary, which act on the other endocrine glands, causing them to form the secondary type of hormones which are bodies of comparatively small molecular weight, most of which have been isolated in a crystalline form and some of

which have actually been prepared synthetically. It will be noted that in this respect the posterior pituitary belongs to the second group.

In conjunction with Cook, Dodds has carried out a brilliant series of researches into these secondary hormones and has shown that simpler compounds than those prepared by the body can have the same biological effect to a less or even greater extent. This basal group with the simplest chemical structure that can produce the biological effect he calls the "skeleton key" which picks the physiological lock. Even more striking was his demonstration that the same basal group could produce more than one biological effect. To such groups he gave the name of "pass keys." Perhaps the most impressive instance of this is the condensation of benzene rings into a phenanthrene ring, which by simple alteration in the degree of hydrogenation can give rise to œstrin, to vitamin D or calciferol, and to the carcinogenetic substance present in coal tar.

It is accordingly by no means fanciful to regard the anterior pituitary as receiving the impulses from the diencephalon, and producing an activating and an inhibitory hormone of a protein character according to demand, which can speed up or inhibit the secretion of the simpler grade of hormone in the other endocrine glands. At any rate it is a unifying hypothesis which deserves further and careful consideration.

ANTIHORMONES

The question has not been simplified by the claims made for the existence of antihormones. Collip showed some time ago that parathormone gradually lost its effect on repeated injections. One might imagine that this failure could be adequately accounted for by its destructive action on the calcium content of bone and muscle, but he [17] now thinks that there is an antihormone both to the pituitary growth and the thyrotropic hormones, and advances the hypothesis that the production of antihormones may be responsible for hypoglandular states. He regards a hormone-antihormone linkage as the normal condition, which can readily be disturbed. The purposive character of such antihormones is hard to see; certainly thyroid administration is effective when continued over many years. The claim for the existence of a catechin in the blood which is antagonistic to thyroxine, if substantiated, suggests a simpler explanation—namely, that various chemical substances can destroy hormones, just as we know the acetylcholine and adrenaline set free on nerve stimulation are rapidly destroyed in the blood or tissue cells.

A CHEMICAL MEDIATOR BETWEEN NEURON AND TISSUE CELL

And this leads me directly to my third point. It has long been common knowledge that emotional states may modify secretion; the tears of sorrow and the dry mouth of fear are proverbial. In such instances it is obvious that a nervous impulse has produced or prevented a chemical process. But it is only quite recently that we have realised that all nervous impulses have a chemical mediator between the neuron and the tissue cell, and indeed between one neuron and another. In Hopkins's phrase, chemical substances are produced which translate for the tissues the messages received by nerves. We have indeed been curiously blind to the fact that the chemical changes produced in a gland by nervous stimulation is only a special case of a general law. I say curiously blind, because this century had only just begun when Langley found a clue which was not really followed up for years. We knew that adrenaline is manufactured by the cells of the adrenal medulla, which are actually formed out of sympathetic ganglion cells. Langley enunciated the law that the effect of adrenaline on any part is the same as if the sympathetic nerves to that part were stimulated; an extraordinarily interesting example of a chemical substance imitating a nervous response. The adrenal medulla was seen to represent the post-ganglionic element in the sympathetic. In 1907 W. E. Dixon made some tentative experiments on the liberation of a chemical substance in the heart after vagus stimulation; unfortunately this encountered so much scepticism that he dropped the subject. But later the work of Loewi and of Dale has proved that acetylcholine is liberated at the terminals whenever sympathetic or parasympathetic pre-ganglionic fibres are stimulated, and adrenaline at the sympathetic post-ganglionic terminals. So Dale [18] speaks of cholinergic and adrenergic fibres, and incidentally shows how this conception explains Langley and Anderson's cross-suturing experiments. You can cross suture cholinergic with cholinergic or adrenergic with adrenergic, but you cannot successfully cross suture cholinergic with adrenergic fibres. Cannon thinks that the substance liberated at the sympathetic post-ganglionic terminal is not identical with adrenaline; he thinks he can extract a slightly different one after an excitant action from that appearing after an inhibitory one. But is it not possible that the adrenaline is modified by an ergotoxin-like action in the former case? For Loewi has shown that physostigmine imitates or increases the effect of parasympathetic stimulation because it prevents the blood or the tissue cell from destroying the acetylcholine produced. Just as physostigmine facilitates, so does atropine interfere with the normal chemical results of parasympathetic stimulation. It is important to note that just as much acetylcholine is produced, whether atropine is given or not—the atropine merely blocks access to the tissue cell.

A Receptor Substance between Nerve-ending and Tissue

This leads me to an aspect of endocrinology which is urgently demanding attention. Some thirty years ago Langley and Elliott independently postulated the existence of a receptive substance between the nerve-ending and the tissue as necessary to explain the facts then known. If such a postulate was required then, how much more is it needed to-day. Just as the appropriate chemical material may get into this receptive substance so may a toxin. G. N. Myers has shown that a therapeutic drug may seize on the receptive substance and thus bar the way to the ingress of the toxin. It seems to me that the pharmacology of the future will have to concern itself with the natural history of these receptive substances, and find out in what way they can be helped by drugs both positively, by facilitating their reactions, and negatively, by blocking the way against the entrance of toxins. Nor is this topic remote from my subject, for Zondek maintains that the adsorption of a hormone such as thyroxine is decreased in the presence of narcotics, such as the barbiturates which are able to adhere to the cell surface and thus to displace the hormone from it. But it is also germane to my subject in a wider sense. Sir Henry Dale, in his recent Harveian Oration before the Royal College of Physicians,[19] reminded us that we are still entirely without any conception why a particular cell should be sensitive to a particular

chemical substance or why the same substance should augment the activity of one type of cell and inhibit that of another. He indicates indeed precisely the problem to which many minds are beginning to devote themselves—the nature of these receptive substances. The nature of the stimulus has been intensively studied, but it is now clear that this is only half, and perhaps the simpler half of the question. The importance of the responsive capacity of the receptor tissues was clearly indicated by Harrison in his Harvey Lectures for 1934. He showed that when transplantation is effected between embryos of species of different sizes, the transplant responds according to its inherited growth capacity rather than to its new endocrine environment. As Keith pointed out some years ago, the partial gigantisms in certain cases of hyperpituitarism can only be explained on the theory that the locally hypertrophied tissues had developed a special sensitiveness to the growth hormone. H. M. Evans has recently shown that the response of the dachshund and of the sheep dog to injections of the pituitary growth hormone is entirely different. Indeed, if such things were not so it would be difficult to account for the structural plasticity of the dog in the hands of the breeder.

Again, after the menopause œstrin may be present in large amounts yet reproductive cycles cease, as if the reproductive organs had lost their capacity to respond rather than that the hormonic stimulus had failed.[20] According to Zondek the fact that hormones in such minute quantities can produce marked generalised effects indicates that they act as catalysts; their activity seems apparently to depend upon the integrity of cellular structure; they are *physical* catalysts. He maintains that the hormones circulate in the blood in an active form; not until they reach the organ of their destination, where they are adsorbed, do they become activated. But at present we have no inkling as to the mechanisms by which any such cellular response is produced or rendered specific. Hopkins,[21] commenting on the comparative failure of the attempts to correlate chemical structure with pharmacological action, pointed out that so far the investigation had been one-sided and should involve consideration of the structure of the cell. The same comment is applicable to the present position of endocrinology.

For a time after Starling developed his conception of the chemical control of the body by hormones, the pendulum swung so far in that direction that it seemed as if the nervous system would be deprived of its pride of place, although Starling himself had pointed out that its special function was to provide for special rapidity of response when required. There are a good many examples of a double mechanism in physiology, and it might be expected to occur in the endocrine system. Cannon's theory of the emergency action of adrenaline in coming to the assistance of the defensive apparatus of the sympathetic is a good example, which, though seriously criticised by Stewart and Rogoff, seems to have re-established itself in favour. Indeed, Dale's work makes it all the more intelligible and probable. Then the nervous control over the pancreatic secretions, both external and internal, became recognised in addition to chemical methods of stimulation such as secretin. If the recent claims[22] are substantiated, that the oral administration of a duodenal extract can keep the blood-sugar of a diabetic normal after he has first been treated by insulin, not only will this double mechanism have been proved for the internal secretion of the pancreas but a therapeutic advance of importance will have been made. And so the pendulum is swinging back again. But lest it should be thought that the propositions, with which I started, stressed the nervous control too much, I will try to restore the balance by referring to recent work on the organiser in the embryo.

The Organiser in the Embryo

We have realised for years that lowly organisms react to such stimuli as light and chemical agents at an evolutionary level before a central nervous system has appeared. But recent embryological work has shown the profound influence exerted by chemical agents on the very genesis of the nervous system. Some twelve years ago Spéman showed that if he transplanted a group of cells from the dorsal lip of the blastopore—i.e., the part where a central nervous system would first appear in the development, to some other part of an embryo—it would lead to the initiation of a central nervous system there, however different the situation was from the normal one. He could produce two central nervous systems at right angles to each other. He called these cells the organiser. Recently the Needhams and Waddington[23] at Cambridge have shown that they can reproduce all the effects of the organiser by extracting a chemical substance from these cells which resists both freezing and boiling. It is therefore a very definite chemical entity but not a ferment. Thus from the very start chemical and nervous mechanisms are interdependent. They have now gone on to some most exciting observations. They have been able to imitate this chemical organiser synthetically and it appears to be closely allied to, if not identical with, œstrin which we know to be a sterol. Thus the ovarian hormone is apparently carried on to the next generation and is primarily responsible for organising the central nervous system. These observers have also been able in a similar way to lead to the formation of various mesodermal structures in parts of the body to which they are foreign.

It seems to me probable that the formation of teratomata is to be explained by the escape of such chemical organisers from their proper site. Dr. Needham has called my attention to some observations by Witschi[24] on the results of delaying the fertilisation of amphibian ova. If the sperm cell is not allowed to unite with the egg cell almost at once, there is a disturbance of the normal sex-ratio in the offspring. If there is a further delay the organiser is liberated at the wrong time and place and teratomata result. Finally, if there is a still greater delay exceedingly abnormal monsters result which actually produce metastases when implanted into adult amphibia. Holtfreter in Munich has already applied these results to the explanation of teratomata in human beings.

It would be a valuable piece of gynæcological research to see if the occurrence of maternal salpingitis or endometritis, which might well delay the fertilisation of the egg cell, could be correlated with the incidence of teratomata. But it would be difficult because a teratoma may produce no symptoms for years. However, Aschheim[25] states that the gonadotropic hormone of pregnancy is to be found in the urine of patients suffering from a teratoma, even in men! This may provide a diagnostic test of real value, and seems to make still more probable the association of teratomata with œstrin gone astray, as it were. Incidentally, I may suggest that the discovery of the importance of œstrin for the development of the embryo may explain why the

chorionic villi of the placenta should manufacture it in such large amounts. Hitherto I do not know that a reason has been offered for this striking fact.

Relation between Œstrin, Calciferol, and a Carcinogenetic Substance

That œstrin, calciferol, and the carcinogenetic substance in coal tar should all be closely related sterols is remarkable. It is extraordinary to find that the necessary stimuli to the growth of the next generation, to the ordinary growth of bone, and to the disorderly growth of malignant disease are due to closely similar chemical substances; that they should to some extent be interchangeable is even more extraordinary. The fact that teratomata stand halfway between abnormal twinning and malignancy is full of interest. It is true that some critics declare that to say that all these conditions are associated with alterations of sterol metabolism is no more than saying that another group of conditions are associated with altered protein metabolism, so manifold are the sterols. Loeb [26] is of opinion that though the hydrocarbons of tar and the œstrogenic hormones may be more efficient than other factors in producing cancer, in principle they do not act differently to numerous other conditions which may cause it. They seem able to induce the change at any point where they come into prolonged contact with tissues which still possess the potentiality of growth and proliferation. But I think such criticisms rather unnecessarily belittle a remarkable series of mutually consistent observations. The widespread importance of sterols in what one may call the metabolism of the moment, has received additional evidence from some recent researches of Carter and Mapson,[27] who find that for the proper functioning of both voluntary and cardiac muscle in the frog, a definite proportion between the concentrations of acetylcholine and sterols in the tissue is necessary. They find moreover that many of the sterols can replace each other in this as in their other actions. Further, they showed that if thyroxine is added to the Ringer's solution in which the muscle is bathed, a tetanic contraction instead of the normal single twitch results on electrical stimulation if this acetylcholine sterol balance is disturbed. Here are some hints as to the lines along which research may reveal something of the factors in the receptive mechanisms.

Sex Reversal

It may be well to say something on sex reversal in general. Undoubtedly the initial bias in sex differentiation is determined by the chromosomes. But although this is the sole and efficient cause in, for instance, insects, its effect is much slighter in birds and mammals, and has to be reinforced by the endocrine activity proper to each sex. Indeed, as Woollard [28] has pointed out, before this time is reached the influence of the chromosomes is so weak that the embryo passes through an indifferent or bisexual phase. This is followed by a brief interval when a masculinising tendency apparently occurs in both sexes; in the female it declares itself as a medullary mass in the rete of the ovary which is really a testicular rudiment, and which may later in life become the site of a virilising new growth. The gonadal territory in the embryo consists in the first instance of a ridge on the medial side of the mesonephric mass. It seems certain that sex reversal is caused by an abnormal growth of mesonephric derivatives which are normally present, though only in a rudimentary form in the female. It follows that the testis is monosexual while the ovary is bisexual, with a male medulla and a female cortex, as it has been expressed. Therefore, physical sex reversal can only occur in woman, and may be due to—

1. Overaction of a basophilic adenoma which inhibits normal ovarian activity, allowing the rudimentary masculine elements to reassert themselves.
2. Overaction of the adrenal cortex, which is mesonephric and contains similar cells to those of the testis.
3. Overaction of mesonephric cells in the rete ovarii, which, as in some of the arrhenoblastomas first described by Pick,[29] may actually develop convoluted tubules resembling the seminiferous tubules of the testis.

Closely similar syndromes of virilism may originate in any one of these three positions and are all due to absolute or relative overaction of masculinising mesonephric structures. On the other hand, the testis being monosexual, sex reversal in man can only be psychogenic.

Conclusion

To state briefly the view of the integration of the endocrine system which I am attempting to visualise, there is doubtless an autonomous activity of these glands according to the steady biochemical demands of the body, but their activity can be profoundly modified and extensively controlled by centres in the diencephalon which are largely concerned with emotional expression. These centres may operate directly through the sympathetic nervous system (indeed, the hypothalamus has been called the head ganglion of the sympathetic) or indirectly through the chemical activities of the anterior pituitary. The anterior pituitary forms two basic secretions probably of a protein character, one being stimulating, the other inhibitory in effect. They correspond in fact to Sharpey-Schafer's original distinction between a hormone and a chalone. It is suggested that the former is produced by the eosinophil, the latter by the basophil cells. These basic secretions are capable of chemical modification according to the needs of the body, and are then ready to stimulate or restrain the secretion of simpler hormones by the other endocrine glands, including the post-pituitary. It may be, as Zondek [30] maintains, that the hormones circulate in an inactive form, only becoming activated when they reach their destination. This indeed might explain some of the observations on the alleged hormone-antihormone linkage. Certain it is that their destination is decided by some peculiar receptive capacity in the structure on which they act, catalytically or otherwise. What determines that receptive capacity we do not know as yet. But we can say that the whole process appears to be a special case of the general law that nervous stimuli, whether passing from the diencephalon to the pituitary, or down neurons to pre- and post-ganglionic endings, act through the intermediary of chemical substances locally produced. And we may find some further support for this view in the fact that, in one instance, the same substance, adrenaline, is the final product of either hormonic or nervous activity.

Historically it is interesting that in 1775 Bordeu wrote: "Every organ serves as a workshop for the preparation of a specific substance which enters into the blood; such substances are useful to the body, and are needed in order to maintain its integrity." Here indeed was the germ of the idea of internal secretion, which was, however, to lie dormant for more than a century. In its renaissance Victor

Horsley played an important part, though at the outset he showed a caution not always characteristic of him. It is not merely for that reason that we are here assembled to do honour to his memory. It is of the man himself of whom we are thinking—attractive, vivid, eager, enthusiastic, a very Rupert of debate, and may I say an intellectual hormone in his effect upon others. Osler tells us that in October, 1873, he listened to an introductory lecture at one of the largest of the London medical schools, the burden of which was that the art of surgery had all but reached its limits! In the falsification of that gloomy prognosis, Horsley with his pathological training, his new ideas, his fresh technique, must be allotted an honourable share. For all these reasons we honour his name and cherish his memory.

REFERENCES

1. Harding, H. E., and Naish, A. E.: THE LANCET, 1935, i., 77.
2. Cushing, H.: Ibid., 1930, ii., 119 and 175.
3. Novak, E.: Jour. Amer. Med. Assoc., 1935, civ., 998.
4. Cushing, H.: Arch. of Internal Med., 1933, li., 487.
5. Collip, J. B.: Jour. Amer. Med. Assoc., 1935, civ., 556.
6. Collip, J. B.: Ibid., 1935, civ., 916; Scowen, E. F., and Spence, A. W.: Brit. Med. Jour., 1934, ii., 805.
7. Quoted by Collip: Jour. Amer. Med. Assoc., 1935, civ., 827.
8. Smith, P. E.: Ibid., 1935, civ., 548.
9. Lescher, F. G., and Robb-Smith, A. H. T.: Quart. Jour. Med., 1935, iv., 23.
10. Woollard, H. H.: Proc. Roy. Soc. Med., 1934, xxvii., 271.
11. Levy-Simpson, S.: Ibid., 1933, xxvii., 383.
12. Crooke, A. C.: Jour. of Path. and Bact., 1935, xli., 339.
13. Russell, Dorothy, and Crooke, A. C.: Ibid., 1935, xl., 255.
14. Russell, D., Evans, H., and Crooke, A. C.: THE LANCET, 1934, ii., 240.
15. Harington, C. R.: Ibid., 1935, i., 1199 and 1261.
16. Dodds, E. C.: Ibid., 1935, i., 931, 987, 1048.
17. Collip, J. B.: Jour. Amer. Med. Assoc., 1935, civ., 965.
18. Dale, H. H.: Dixon Memorial Lecture, 1934; Linacre Lecture, 1934.
19. Dale, H. H.: Brit. Med. Jour., Oct. 26th, 1935, p. 771.
20. Evans, H. M.: Jour. Amer. Med. Assoc., 1935, civ., 464.
21. Hopkins, F. Gowland: Brit. Assoc. Presidential Address, 1933.
22. Duncan, G. G., et al.: Amer. Jour. Med. Sci., 1935, clxxxix., 403.
23. Needham, Waddington, and Needham: Proc. Roy. Soc. B., 1934, cv., 393.
24. Witschi, E.: Proc. Soc. Exp. Biol. and Med., 1930, xxvii., 475, and 1934, xxxi., 419.
25. Aschheim, S.: Jour. Amer. Med. Assoc., 1935, civ., 1324.
26. Loeb, L.: Ibid., 1935, civ., 1597.
27. Carter, G. S., and Mapson, L. W.: Nature, 1935, cxxxvi., 143.
28. Woollard, H. H.: Loc. cit.
29. Pick: Berl. Klin. Woch., 1905, xix., 502.
30. Zondek, H.: The Diseases of the Endocrine Glands, London, 1935, p. 8.

THE VALUE OF GASTROSCOPY

BY HAROLD C. EDWARDS, M.S. Lond., F.R.C.S. Eng.

SURGEON AND LECTURER IN SURGERY TO KING'S COLLEGE HOSPITAL, LONDON

(WITH COLOURED PLATE)

THE invention in 1932 of a flexible gastroscope by Wolf and Schindler marked a new era in gastroscopy. The instrument is such an enormous improvement upon anything which had been produced previously that it has entirely replaced the older instruments, which were chiefly of the Sussmann type and semi-rigid (Fig. I.), and has converted a somewhat dangerous and uncertain operation into one which can be performed with no risk and little discomfort. The instrument differs from its predecessors in that the part which enters the stomach is made of rubber and is thus truly flexible, and may be bent in any direction. The degree of flexibility is not much less than that of an ordinary stomach-tube, while its diameter is approximately the same. A clear vision can be obtained with the flexible part curved on the rigid part, which carries the eye-piece, to an angle not exceeding 60 degrees.

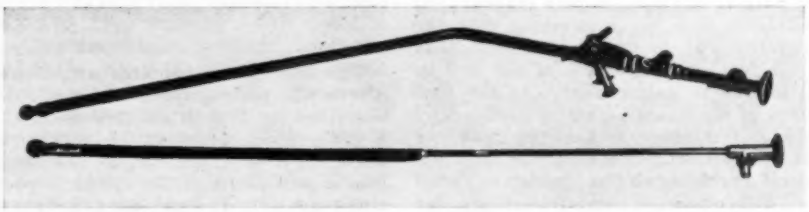


FIG. I.—The Sussmann gastroscope (kindly lent by Mr. Arthur Edmunds) and below the latest pattern Wolf-Schindler flexible gastroscope. The Sussmann instrument is all metal, but the distal half of the Wolf-Schindler instrument is made of rubber.

Before any method of investigation can claim a place in clinical medicine it must be shown that its value to the patient is worth any risk or discomfort entailed in its performance. It would thus be unwise to regard the recent display of enthusiasm for gastroscopy in European clinics as a correct index of its clinical value. Anyone who has examined the flexible gastroscope cannot fail to be impressed with its wonderful ingenuity, and the possibility will arise in his mind that enthusiasm begotten of the instrument itself has unwittingly been translated into magnification of the results obtained with it, in order that its use may be justified. In other words, is it gastroscopy or is it the gastroscope which appeals? I have tried not to allow myself to be thus influenced in this attempt to assess the value of the modern gastroscope to clinical medicine.

My interest in the Wolf-Schindler gastroscope was first aroused by an editorial appearing in THE LANCET in 1933.[1] Soon afterwards I visited Dr. Norbert Henning's clinic in Leipzig, and later that of Prof. François Moutier in Paris, and I am greatly indebted to both these gentlemen for the generous way in which they instructed me. Immediately on my return from Henning's clinic I began to practise gastroscopy at King's College Hospital.

The Examination

Gastroscopy is done *after* the routine radiological investigation, so that obvious contra-indications to it, such as œsophageal stenosis and aortic aneurysm, are avoided. There is no risk whatsoever if ordinary care is exercised. The examination is carried out under local anæsthesia (2 per cent. Dessicaine), after a preliminary injection of morphia and atropine, with the patient lying on his left side on a special table. As the flexible part of the instrument is no larger in diameter than an ordinary stomach-tube its passage is not a matter of great difficulty, and neither does it cause any great distress to the patient. In both respects there is, naturally, considerable variation in different individuals, and both diminish as the experience of the operator increases. So far there has been no failure to pass the gastroscope.

[1] The Flexible Gastroscope, THE LANCET, 1933, ii., 813.

After the instrument has passed through the cardia the rest of the introduction is made under vision, the stomach being moderately distended with air from a bellows attached to a special arm near the eye-piece of the gastroscope. The patient is conscious of a dull pain if the instrument presses at all upon the greater curvature, and this may give rise to considerable distress in the nervous subject. It is, however, not always necessary to bring the gastroscope into contact with the greater curvature; in the event of its necessity it may be done so gently that the discomfort is slight and transient.

Distension of the stomach with air does not cause much distress provided it be of moderate degree and the air be not forced in too quickly. The chief distress to the patient in this connexion is inability to express his apologies to the operator should he involuntarily belch up some of the air while the examination is in progress! The day after examination the patient complains of a little soreness of the throat, but has no other discomfort.

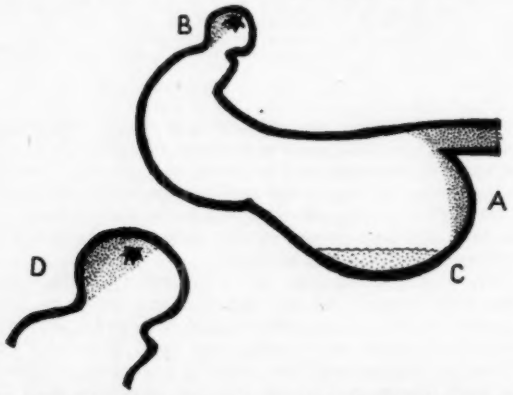


FIG. II.—Diagram to show the area of stomach which may be inspected by means of the flexible gastroscope. The fundus (A) cannot be seen. The greater curvature aspect of the antrum is usually obscured by the pillar of the antrum (B and D). The pylorus (B and D) may be seen in the majority of cases. At C is a lake of mucus, which obscures the mucosa in this area.

Though as yet I lack the opinion of a patient who has experienced both, it is my impression that the discomfort of gastroscopy is no greater than that of cystoscopy. A further comparison of the two is, however, unfavourable to gastroscopy. In the first place the duration of the examination in gastroscopy should not exceed 5–6 minutes, so that the examiner has less time at his disposal. Secondly, the stomach does not lend itself as readily as the bladder to visual inspection, and difficulties of orientation are far greater. The stomach cannot be uniformly distended, nor can an even pressure be maintained in it. It moves continuously during the examination. This movement is partly due to the excursion of the diaphragm, the stomach moving as a whole, and partly to peristalsis. The latter is the more disturbing to the gastroscopist. As a result of peristalsis the shape of the stomach is continually changing, and consequently some of the landmarks which the gastroscopist uses as a guide to orientation change their relation one to another from one moment to the next. It is thus a matter of great difficulty to get to "know one's way round" the stomach, and although, as on the cystoscope, there is a small knob on the eye-piece which indicates the direction in which the objective lens is pointing, considerable experience is required before the operator can with confidence declare what area of the stomach he has in the field of the gastroscope at any given time. He must learn to distinguish the greater from the lesser curvature by the character of the mucous membrane alone, and by the same token to distinguish the anterior from the posterior wall. The stomach as viewed through the gastroscope differs vastly from all conceptions of it derived from previous anatomical, physiological, and radiological studies. Its normal gastroscopic appearance and motility can be learned only by actual practice upon the living subject; for experience upon the cadaver or upon the phantom stomach—however ingeniously the latter be constructed—is entirely without value.

The area which may be inspected in the average case is shown diagrammatically in Fig. II. The fundus of the stomach—that is, the part under the diaphragm situated at a higher level than the cardia—cannot be seen. In most of the cases this applies also to the greater curvature aspect of the antrum. The pylorus itself is visible in rather more than half the cases—excluding those in which there is midgastric stenosis. The ability to see it depends largely upon the angle which the antrum makes with the body of the stomach. Frequently the pylorus may be clearly seen when relaxed, but as it contracts it disappears out of the field behind the greater curvature wall of the antrum, or vice versa.

The view obtained of the stomach wall is not distorted and is perfectly clear—as clear every bit as that to be obtained of the bladder at cystoscopy under ideal conditions. In the normal stomach the mucous membrane is of an orange colour and thus differs from the white appearance of the normal mucosa in the bladder and rectum. At first sight, indeed, the normal stomach appears to be inflamed because of this. The very powerful illumination given by the gastroscope causes very complex light effects, the light being reflected brilliantly from the moist surface of the stomach so that that part of the field which faces the light may appear to be of a dazzling pink-white, whereas the periphery is of a darker orange. The complexity of the effects produced is due to the presence of the numerous folds. This lighting effect, however, in no way interferes with the identification of pathological changes once the operator has got used to it.

LANDMARKS

The two chief landmarks are, I think, the antrum above (the patient lying on his left side) and what is described by French authors as the "lac muqueux" below. This collection of mucus gathers at the most dependent part of the stomach, which in the lateral position is at the splenic aspect of the greater curvature; it is seen as a brilliantly white area. The antrum in front, though it can always be recognised provided there is no mid-gastric stenosis, varies considerably in appearance (Fig. III. on Plate). On occasion it is merely a narrowing of the stomach whose folds may not completely surround the stomach, but form only two-thirds or even a half of a circle. In this condition the wall of the antrum is relaxed. When a peristaltic wave comes down the stomach, however, the antral wall becomes more clearly defined and on occasion it may contract in a sphincteric manner so that the antral chamber is momentarily shut off from the body of the stomach. At first the gastroscopist may think that he is looking at the pylorus, so complete is this sphincteric action.

The lesser curve can readily be distinguished from the rest of the stomach because it contains few or no rugæ, but shows a glistening smooth surface to

the observer. On the anterior and posterior walls the rugæ are numerous and well defined. They form a very complex pattern, but their chief direction is parallel with that of the long axis of the stomach.

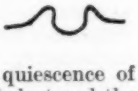
As has been stated, the pylorus can be seen in the majority of the cases, but it may be necessary to wait for a considerable time for it to come into the visual field (Figs. III. and VII. on Plate). Normally, it is obscured by the upper and anterior part of the antral fold and it is not until a wave of peristalsis comes down the stomach that it swings into view. The mode of its contraction may be clearly observed in some cases where it is in the visual field all the time. When relaxed it shows as a wide opening with a slightly crenated margin. Through it the mucous membrane of the duodenum can be seen, but this is not sufficiently illuminated for one to observe detail. Its contraction occurs rapidly and the greyish-coloured opening disappears as the walls of the pylorus come together. When closed the pylorus is seen as a dimple from which radiate a number of fine lines. As the pylorus closes a little of the duodenal mucous membrane is forced through into the stomach and with this a spurt of bile comes through from the duodenum. Should there be any doubt in the mind of any that duodenal regurgitation is a normal feature of the pyloric action, inspection of the behaviour of a pylorus in the normal stomach would convince him that it is a very real thing. Throughout the whole examination, as has been said, the stomach is in constant movement, partly from external forces and partly because of peristalsis.

Appearances in Disease

Thus the gastroscope, whose introduction into the stomach is not attended by any great degree of discomfort, enables a direct inspection of the greater part of the mucous lining of the stomach. What helpful data may the gastroscope therefore add to those derived from clinical, radiological, and chemical investigations in cases of gastric disorder? The answer to this question is best considered under separate headings.

GASTRIC ULCER

An ulcer of the lesser curve can always be seen unless it is of small size and lying between two folds of the stomach. The first time an active ulcer is seen a very striking impression is made upon the investigator. It looks what it really is—a great angry sore. Its edges are swollen with œdema and intensely red, and its base is covered with a light yellowish or grey slough. The œdema at the margin of the ulcer produces an edge which is raised into the stomach and thus the ulcer is crateriform (Fig. IV. on Plate). If observed in section it would be thus: As a result of the œdema the thickness of the stomach wall at the margin of the ulcer is considerably greater than the normal. In an inactive type of ulcer, or rather during the stage of quiescence of symptoms, this œdematous appearance is lost and the ulcer in consequence appears to be a great deal shallower, although the degree of actual penetration of the stomach wall is probably the same in both (Fig V. on Plate). This confirms what I believe Barclay[2] was one of the first to point out—viz., that the very deep crater shown in a radiogram of an active ulcer is not due to penetration of the coats of the stomach so much as to the wall of œdema built up at the ulcer edge, causing this to project into the stomach; and that the rapid disappearance, or rather diminution of the size of the ulcer crater, which follows on treatment, is due not to the healing of the ulcer but to the resolution of the œdema. In less active types the base is greyish and inert looking, and the rugæ are drawn together towards the ulcer so that the latter bears the same relation to them as does the axle of a wheel to the spokes. It is not too much to say that one gets an entirely new conception of a gastric ulcer when it is shown up thus in its true colours, and one can far more readily appreciate the suffering which it is capable of causing. Moreover, through the gastroscope one may be able to witness the upsetting effect of the presence of an active ulcer upon the normal movements of the stomach.



[2] Barclay, A. E.: THE LANCET, 1929, ii., 1213.

Of what practical value is this ability to see gastric ulcers? In what way, if any, does the gastroscope help the clinician? The patient is being submitted to a degree of discomfort by gastroscopy. To what extent may he benefit? Is his gain worth the price he is paying for it? These are the questions which demand an answer before gastroscopy can be accepted as a routine measure in the investigation of gastric ulcer cases.

First, *diagnosis*. Is the gastroscope of value? The answer to this, I think, is yes, but only in cases of doubt. The vast majority of gastric ulcers may be demonstrated radiologically, and with little or no discomfort to the patient. In every clinic, however, there are a certain number of cases in which the clinical history strongly suggests the presence of a gastric ulcer, but in which radiography shows no more than persistent irregularity of the lesser curvature or sometimes of the greater curvature. In such cases gastroscopy is of immense value. The gastroscopist is able to concentrate his attention entirely upon the area of the stomach under suspicion and can readily determine whether or not an ulcer is present. Gastroscopy here is every bit as reliable a diagnostic measure as exploratory laparotomy—and how frequently has this been done in the past with inconclusive results—and, it is needless to add, immeasurably safer and less disturbing. Already in my experience a small ulcer on the anterior wall of the antrum near the lesser curve has been demonstrated by the gastroscope in a case in which X rays showed only persistent spasm of the greater curvature opposite to this situation (Case 1).

A further use of the gastroscope lies in *differential diagnosis*. A large ulcer crater is demonstrated radiologically—is it malignant? The good view yielded by gastroscopy may, as will be discussed later, enable this question to be answered with certainty.

Thus for diagnosis. How far may *treatment* be affected? It is not practicable to use the gastroscope as a direct means of treatment, such as making an application of drugs to the ulcer. It is thus of no value in this connexion. But its use here lies in checking the results of medical treatment, in which we have so far had no absolute criterion of complete cure. The disappearance of symptoms, and of occult blood from the stools, and even of the ulcer crater as shown radiologically, are not entirely reliable guides. By gastroscopy a much greater degree of certainty is achieved. Already in two cases in which the criteria given above were present, a small ulcer crater could still be demonstrated by gastroscopy. Such knowledge well repays the patient for the discomfort of the examination, for it either may bring about the termination of the weary process of dieting or prevent it being stopped prematurely. Thus may gastroscopy be claimed of value in relation to

gastric ulcer: (*a*) in cases of doubtful diagnosis; (*b*) in differential diagnosis; or (*c*) as a criterion of medical cure.

NEW GROWTH

Most cases of carcinoma of the stomach do not find their way to the surgeon until a stage has been reached when the diagnosis is made only too readily by clinical examination and easily confirmed by X rays. There are cases, however, in which doubt exists as to whether the symptoms are due to a peptic ulcer or to a growth, or whether a peptic ulcer is becoming malignant—the clinical and radiological evidence being equivocal. Here the gastroscope offers the most adequate means of coming to a decision. The degree of infiltration, the presence of secondary nodules, the friability of the edge, and the readiness to bleed, are all signs of malignancy which the gastroscope is capable of revealing. In fact one has the enormous advantage of direct inspection. Just imagine how hampered we should be, say, in making a differential diagnosis of an ulcer of the tongue had we to rely on the history and a radiogram showing the extent and shape of the ulcer cavity! How many errors we should make, and yet how simple a matter it is as a rule to diagnose with certainty a malignant ulcer of the tongue just by looking at it. By gastroscopy we are offered the inestimable advantage of being able to look directly at the ulcer. Herein lies one of its greatest values—in this differential diagnosis between a peptic ulcer and early carcinoma. I do not claim that in every case a differentiation is possible—is it so in carcinoma of the tongue by inspection? But I do plead that it adds enormously to the present routine methods of diagnosis.

In three cases (Nos. 2, 3, and 4) in my series, in which the clinical and radiological diagnosis was ? carcinoma of the pylorus, the gastroscope showed a normal stomach, with the motor function of the pylorus unimpaired. All three were operated upon. In one there was a narrowing of the pylorus with no sign of growth or ulcer (Case 3). In a second there was some thickening along the greater curvature, starting at the pylorus (Case 2). A gastro-enterostomy was performed, and seven months later the patient reported well, having put on weight. In the third (Case 4) the stomach was normal, and the cause of the symptoms was found to be a carcinoma of the head of the pancreas.

The radiologist has made possible of recent years the diagnosis of simple tumours of the stomach, as also that borderline condition of polyposis ventriculi. Here the gastroscope will confirm with absolute certainty such diagnoses.

CHRONIC GASTRITIS

Previous to my experience of gastroscopy, largely perhaps as a result of surgical bias, I had regarded a diagnosis of chronic gastritis with suspicion. I had the feeling, no doubt shared by many, that such a diagnosis was in reality a cloak for ignorance. But I now recognise the condition as a very definite clinical entity, and one which is not so very rare.

Changes in the mucosa consistent with such a diagnosis are, in fact, seen through the gastroscope fairly often. These changes exist in a confusing variety of forms. Basing them on gastroscopic observation, Moutier describes four main varieties of chronic gastritis, with no less than fourteen subgroups. My own observations have so far enabled me to distinguish only three distinct types: (1) superficial or catarrhal, (2) hypertrophic, (3) atrophic.

Superficial or catarrhal.—In this condition the pathological changes appear to be limited to the surface layers of the mucous membrane, and little change is to be observed in the rugæ. The most characteristic feature is an alteration in colour from the normal orange to a dull red, and a loss of that lustre which, in the normal, reflects the gastroscope light very brilliantly. The mucosa appears to be thickened, and there is an excess of mucus, which collects between the folds. There may be small superficial erosions, from which a little blood may ooze.

This form of gastritis is most frequently seen in association with a gastric ulcer or carcinoma, and is localised to the area of stomach wall in the immediate vicinity. It may also be seen in very characteristic form surrounding the stoma of a gastrojejunostomy (Fig. X. on Plate).

Hypertrophic.—This condition is characterised by thickening of the rugæ, with deepening of the intervening furrows in consequence. In extreme examples, according to Moutier and other observers, the stomach may develop a mamillated appearance, or fringes of thickened mucosa project into the stomach like polypi. Erosions are seldom seen, there appears to be little tendency to bleeding, and there is no excess of mucus. The condition most commonly exists independently of ulceration or growth (Fig. VIII. on Plate).

Atrophic.—This condition may be readily recognised by the thinness and paucity of rugæ. The mucosa is of a paler hue than normal, and it may be possible to see the larger blood-vessels, which are normally invisible, as they traverse the submucosa. Atrophic gastritis is a rare form of the disease; it is usually associated with one of the anæmias, and is probably not primarily a lesion of the stomach (Fig. IX. on Plate).

It is well known that the diagnosis of chronic gastritis, more particularly of the hypertrophic type, may be made radiologically; without in the least disparaging the use of X rays in this connexion, I have no hesitation in declaring that gastroscopy offers a surer means of diagnosis, especially in the earlier stages of the disease.

POST-OPERATIVE LESIONS—GASTROJEJUNAL ULCER

The mass of literature which has grown up in recent years relating to the diagnosis of gastrojejunal ulcer is eloquent of the uncertainty which at present attends it. I hesitate to make any statement about the incidence of gastrojejunal ulcer for fear of reawakening the now latent enthusiasm of those who wrote so extensively on the subject a few months ago. Nevertheless, it should be made clear that most published statistics of the incidence of anastomotic ulcers include a large number of cases diagnosed by symptoms alone.

The mere appearance of symptoms suggestive of ulcer after a gastro-enterostomy has been performed is no certain criterion of the presence of an actual ulcer at the anastomosis; and X rays, though of immense value on occasion, cannot reveal ulcers here with anything like the precision they reveal ulcers of the lesser curve of the stomach. Symptoms identical with those of a chronic gastrojejunal ulcer may arise from a chronic non-ulcerative inflammation surrounding the stoma. I cannot do better than quote the view expressed by Dr. Hurst in this connexion:[1]

"A good deal of disagreement about the incidence of the complications of gastrojejunostomy arises from the fact that many surgeons are unaware that a severe gastrojejunitis on both sides of the anastomotic line, with or without superficial erosions, is as common a cause of serious symptoms as a chronic ulcer, and is generally responsible for recurrent hæmorrhage in the absence of pain. This condition cannot be recognised with the X rays nor by inspection of the anastomosis in the course of an operation, with the result that the abdomen is often

[1] Hurst, A. F.: Brit. Med. Jour., 1931, i., 897.

closed after dividing adhesions or some other equally futile procedure. If partial gastrectomy is performed the true nature of the condition is discovered and the patient cured."

My experience thus far has been limited to the examination of three cases in which on clinical grounds there were the strongest reasons for suspecting the presence of a gastrojejunal ulcer following gastro-enterostomy; the radiograms were inconclusive. The intervals following operation were 7, 5½, and 2½ years, and, as far as could be ascertained from the history, the gastro-enterostomy had in each case been performed for the cure of duodenal ulcer (Cases 5, 6, and 7). In all three I was able to make a close inspection of the stoma. I do not know whether I was unusually lucky in bringing all three stomata into the field, although theoretically it should always be possible to see the opening when situated on the body of the stomach, whether anterior or, as of course is more usual, posterior. The view is limited to the gastric aspect, needless to say. A portion of the jejunal mucous membrane may, however, be seen if conditions are favourable.

In no case was a gastrojejunal ulcer present. In all, however, the area of stomach surrounding the anastomosis had the characteristic appearances (already described) of chronic superficial or catarrhal gastritis, two of them with small erosions. In one case the persistence and severity of the symptoms led to operation, and the gastroscopic findings were confirmed (Case 5).

In the light of this experience it is clear that the gastroscope is a very valuable help in the elucidation of suspected trouble in the neighbourhood of a gastro-jejunal stoma. I would even go further and say that the gastroscope is the only sure means of diagnosis.

RARE CONDITIONS

In tuberculous disease or syphilis of the stomach or in conditions such as chronic intussusception through a gastro-enterostomy stoma, it seems probable that gastroscopy would be a very useful adjunct to radiological diagnosis, although as yet none of these rare conditions has come under my observation.

Case Records

The following cases illustrate the value of the method.

CASE 1.—Man aged 39. Complained of pain in the stomach 1½–2 hours after meals, and relieved by sickness. Symptoms began about six years ago, but there had been long periods of remission. In 1930 was radiographed at another hospital and a gastric ulcer reported (? position). Had been treated medically for the past two years. Radiography showed persistent spasm of the greater curvature of the antrum, but no ulcer. Gastric residuum showed hyperacidity.

Gastroscopy (Feb. 2nd, 1935).—Oval shallow ulcer on lesser curvature of antrum. Nil else abnormal. Operation advised, but refused.

CASE 2.—Man aged 65. For 12 months had complained of pain in the epigastrium with some loss of weight. The pain had no relation to meals and was practically constant. He vomited on one occasion and the appetite was poor. Radiography showed a filling defect at the pylorus, and the report queried the possibility of carcinoma of the pylorus. Gastric residuum showed low total acid and no free acid.

Gastroscopy (Feb. 19th, 1935).—Very easy examination and a good view of the distal two-thirds of the stomach obtained, though residue prevented inspection of the proximal end of the posterior wall. Both the pylorus and the antrum were clearly seen. Peristalsis was active and there was no sign of growth. The mucous membrane was healthy.

Operation (Feb. 22nd).—There was some thickening extending from the pylorus for a little distance along the greater curvature, but no actual growth was evident. The stomach was opened and the antrum and pylorus were explored with a finger. No sign of ulceration was present. In view of the thickening at the pylorus gastro-enterostomy was performed. When seen on Sept. 12th he was feeling very well and had put on weight.

CASE 3.—Man aged 54. Vague history of indigestion for many years. During the past three weeks had complained of pain in the epigastrium and sickness. Appetite poor. ? Loss of weight. Examination of the abdomen revealed a rounded immovable mass to the right of the umbilicus, corresponding with the position of the pylorus as shown in the radiogram. X rays showed a five-hour residue in the stomach with a fixed deformity at the pylorus. ? ulcer ? new growth. Gastric residuum showed a high normal acidity. The association of a mass with deformity at the pylorus, together with the history, seemed to make a diagnosis of carcinoma of the pylorus, despite the gastric acidity, a reasonable certainty.

Gastroscopy (Sept. 4th, 1935).—Complete and easy examination. Pylorus normal.

Exploration (Sept. 9th).—Despite the negative gastroscopic finding, the clinical and radiological findings appeared to make operation imperative. The fixed mass proved to be an ectopic kidney of normal size and shape. The pylorus appeared to be normal to inspection and palpation. A small incision was made in the stomach and the pylorus explored with the finger. Apart from the fact that the pyloric ring appeared to be narrower than is usual, no abnormality was found, and the findings at gastroscopy were thus confirmed.

CASE 4.—Man aged 66. Three months' history of pain in the epigastrium. Practically constant and no relation to food. Occasional vomiting with poor appetite and some loss of weight. A history of coffee ground in the vomit on one occasion. X rays showed a deformity at the pylorus which suggested an ulcer in this situation although no crater was to be seen. Gastric residuum showed acid content to be within normal limits.

Gastroscopy (May 3rd, 1935).—Examination was not satisfactory as there was too much residue in the stomach. The patient then spent some time in the hands of the dentist and on May 22nd a second gastroscopy was done. Complete examination was possible and the pylorus was seen to be quite normal. Neither growth nor ulcer was present. The mucous membrane was pale and atrophic.

Operation (May 24th).—Carcinoma of the head of the pancreas was found growing upwards towards the first part of the duodenum. The stomach was normal.

CASE 5.—Man aged 39. Long-standing history suggesting a chronic duodenal ulcer. Two and a half years ago appendicectomy was performed and two years ago a gastro-enterostomy, both at another hospital. One year ago he had been under observation for a return of pain, also at another hospital. He complained of pain similar to his old trouble in incidence but situated to the left of the midline, and there was some tenderness on abdominal examination above the umbilicus. Radiography showed a gastro-enterostomy stoma which appeared to be working satisfactorily. The gastric residuum showed achlorhydria with only a mild response to histamine.

Gastroscopy (May 3rd, 1935).—Complete examination possible. Pylorus normal. The stoma was seen and appeared to be of adequate size, but the mucous membrane of the stomach surrounding it was reddened and swollen from œdema (Fig. X. on Plate). Two small erosions were present.

Operation (May 17th).—There was no naked-eye evidence of a duodenal ulcer and the pylorus was patent. The gastro-enterostomy stoma was examined and no ulcer found, although there was considerable redness of the peritoneum in the neighbourhood. The stoma was excised and the parts restored to their normal relations. Pathological report on a section of the stoma showed inflammatory infiltration of submucosa consisting of polymorphonuclears, eosinophils, and plasma cells.

CASE 6.—Man aged 59. Gastro-enterostomy had been performed for duodenal ulcer five and a half years ago.

After a period of relief of some months only, he began to experience abdominal pain again. This resembled in character the pain before operation, but relation to food was less defined and it varied in intensity from day to day, though there were no periods of complete remission. Latterly it had become more constant. X rays showed a gastro-enterostomy stoma apparently functioning satisfactorily. Gastric residuum showed a low normal acidity.

Gastroscopy (April 4th, 1935).—The pylorus was not seen. The mucous membrane of the distal half of the stomach appeared to be normal. The gastro-enterostomy opening was seen on the posterior wall, near to the greater curvature. The surrounding area was scarred, and the gastric mucous membrane at the margin of the stoma was pale and œdematous. There was no ulcer.

CASE 7.—Man aged 33. Previous history suggesting duodenal ulcer, for which a gastro-enterostomy had been done seven years ago. This was followed by complete relief from symptoms until six months ago, when epigastric pain returned, accompanied by occasional sickness. On two occasions there had been blood in the vomit. X rays showed the gastro-enterostomy stoma to be working, apparently satisfactorily. Gastric residuum showed a low normal acidity.

Gastroscopy (March 3rd, 1935).—Pylorus seen and working normally. Distal two-thirds of stomach normal. The edges of the gastro-enterostomy stoma were well defined, and there was no contraction. The rugæ in the neighbourhood were much hypertrophied, and the mucous membrane reddened. At one point there was an erosion.

Summary

The examination of gastroscopy, carried out with the new Wolf-Schindler flexible gastroscope, is entirely without risk, and its performance does not cause much discomfort to the patient.

The gastroscope permits of direct inspection of the greater portion of the lining of the stomach, but experience is necessary in order to interpret the findings, and particularly to master the technique of orientation. Gastroscopy does not in any way replace or rival X ray examination, which should always be performed before gastroscopy is contemplated.

Gastroscopy may be a useful adjunct to radiological examination in the diagnosis of gastric ulcer, especially in obscure cases, and may be of value to the clinician in checking the results of medical treatment.

It is of the greatest assistance in cases of suspected carcinoma when the clinical and radiological findings are equivocal. It is the best means at our disposal of making a diagnosis of chronic gastritis, and also of the nature of morbid conditions affecting the stoma in gastrojejunostomy. Finally, gastroscopy may be the means of saving the patient an operation.

The gastroscope has therefore a definite field of usefulness in the management of cases of gastric disorder, and with increasing experience of the operator, and perhaps when still further improvements are made in this most ingenious instrument, this field of usefulness will be more widely extended.

CYSTS OF THE SEMILUNAR CARTILAGE OF THE KNEE

BY JOHN P. HOSFORD, M.S. Lond., F.R.C.S. Eng.

TEMPORARY ASSISTANT DIRECTOR, SURGICAL PROFESSORIAL UNIT, ST. BARTHOLOMEW'S HOSPITAL

(WITH ILLUSTRATIONS ON PLATE)

IN 1904 Ebner reported the first case to be recognised of a cyst of the external semilunar cartilage of the knee. Since then cysts of the semilunar cartilages have been reported in gradually increasing numbers; the condition is not uncommon and most orthopædic surgeons probably meet several cases a year. In all the six cases seen at St. Bartholomew's Hospital in 1934, recorded below, histological sections of the cysts and adjoining cartilage were made and it is thus possible to discuss their pathology and origin as well as their clinical manifestations.

This peculiar cystic change in the semilunar cartilage is found about five times as frequently in the external cartilage as in the internal, and males are affected more commonly than females. It usually occurs between the ages of 20 and 30, although it has been recorded in patients over 50 (Ollerenshaw). There is often a history of trauma though this is not in any way as characteristic or constant as in cases of injury to the cartilage. It is difficult to appreciate the exact relationship between trauma and the origin of these cysts, because an injury to

DESCRIPTIONS OF ILLUSTRATIONS ON PLATE

MR. EDWARDS

FIG. III.—A view of the antrum partly contracted. The pylorus is almost fully contracted.

FIG. IV.—An active ulcer of the stomach situated on the lesser curvature aspect of the antrum. Much "catarrhal" gastritis coexists. The mucosa is intensely reddened and swollen so that the rugæ are almost obliterated and there are a few small erosions, one of which is to be seen in the left pillar of the antrum. The patient was a man of 53, who had had symptoms of epigastric pain of 14 days' duration. There had been no previous gastric history.

FIG. V.—A callous ulcer situated on the posterior wall of the stomach near the greater curvature. The rugæ in the neighbourhood are considerably thickened but there is little or no œdema at the edge of the ulcer.

FIG. VI.—Carcinoma of the stomach. A large growth with necrotic surface growing from the posterior wall and encroaching upon the lesser curvature near to and obscuring the pylorus. X rays showed a 7-hour delay of barium in the stomach.

FIG. VII.—The pylorus semi-relaxed. The stomach in this case was atonic and little peristalsis was observed.

FIG. VIII.—Chronic hypertrophic gastritis. Hypertrophy of the rugæ with increased vascularity of the mucous membrane.

FIG. IX.—Chronic atrophic gastritis from a case of pernicious anæmia. The mucous membrane of the stomach is pale and the rugæ are small and poorly defined. Owing to atrophy of the mucosa the blood-vessels of the lesser curvature can be clearly seen.

FIG. X.—Gastro-enterostomystoma. (Case 5.) The gastric mucosa is swollen and œdematous. There is excess of mucus and there are two small erosions near the orifice.

MR. HOSFORD

FIG. I.—An area of mucoid degeneration without any cyst formation. (× 60.)

FIG. II.—Great thickening of artery with consequent narrowing of the lumen. (× 60.)

FIG. III.—Small cyst filled with mucoid material. There is no endothelial-celled lining. (× 70.)

FIG. IV.—Wall of larger cyst. Lining cells resemble those in the underlying fibrocartilage. (× 70.)

MR. EDWARDS: VALUE OF GASTROSCOPY.

MR. HOSFORD: CYSTS OF SEMILUNAR CARTILAGE

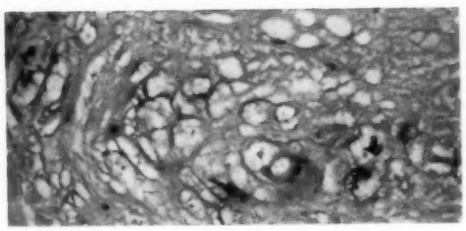


FIG. I.

FIG. II.

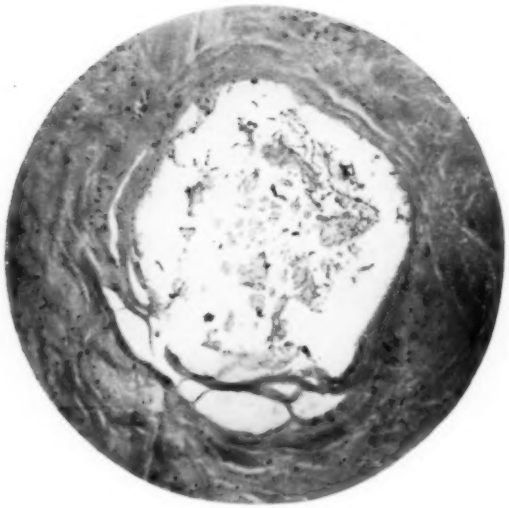


FIG. III.

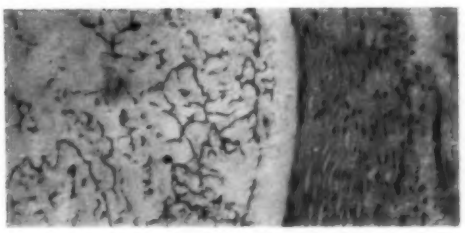


FIG. IV.

FIG. III.

FIG. IV.

FIG. V.

FIG. VII.

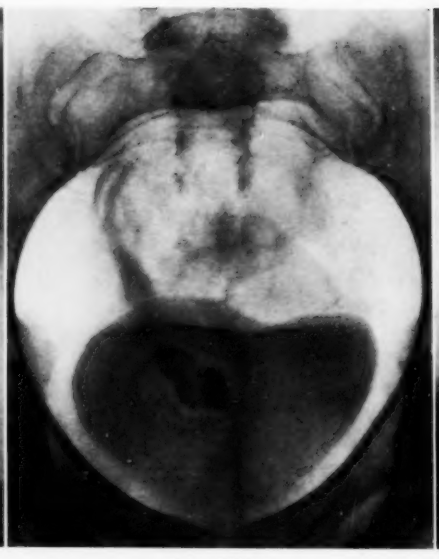


FIG. VIII.

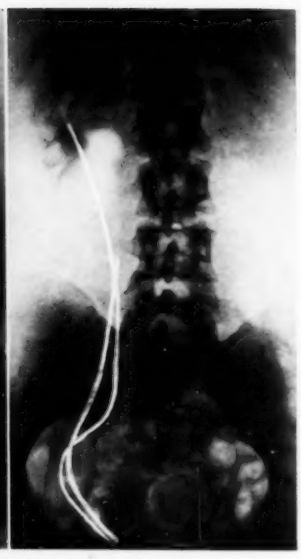


FIG. IX.

FIG. X.

FIG. XI.

FIG. XII.

the knee of one sort or another is so common. The associated history, however, occurs so often that it cannot be neglected.

Usually the patient seeks advice because of a continuous discomfort in the whole knee, aggravated by exercise, and unless the possible presence of a cyst is remembered the surgeon as well as the patient may overlook it. Sometimes he helps in diagnosis by complaining of a swelling on the outer side of the knee, slightly tender, and becoming more painful after exercise. Occasionally the history is that the knee "lets the patient down"; but never that the knee-joint locks. Not uncommonly the knee swells after vigorous exercise.

On examination, when the cyst is of the external semilunar cartilage, a swelling is found on the joint line above and a little anterior to the head of the fibula and to the external lateral ligament. The swelling may be so small as to be hardly perceptible or as large as a walnut. Fluctuation may or may not be obtainable depending on the size and tenseness of the cyst. The range of movements of the joint are in most cases full and painless and neither clicking nor grating are felt. Springing of the external lateral ligament causes no pain; on the other hand, when the tibia is abducted on the femur pain is sometimes felt on the outer side of the joint, presumably produced by compression of the enlarged external cartilage. So far as is known these cysts do not tend to disappear spontaneously although a number of patients say they get smaller and the pain gets less when the knee is rested, only to return when activity is resumed. A skiagram of the joint does not usually show anything abnormal, although occasionally there may be considerable erosion of the tibia, as in the cases reported by Fairbank and Lloyd.

CASE 1.—A. B., male aged 33, a clerk. 1929. Following a "twist of the knee" at football, there was an effusion into the right knee, which gradually subsided. On patient recommencing football three months later a swelling appeared at the outer side of the knee. It got larger and more painful whenever he played games, and improved when he rested. When he kept the leg still in one position for any length of time the knee ached; this had recently interfered with sleep.

February, 1934: The cyst was removed together with the external semilunar cartilage.

CASE 2.—C. D., male aged 24, an accountant. December, 1933. There was no history of injury but patient noticed pain in his left knee while playing football. Even after rest for a month he was unable to continue playing for more than ten minutes, since the whole knee became painful. The pain was always felt throughout the joint, and was not confined to one spot.

April, 1934: The cyst was removed with the external semilunar cartilage.

CASE 3.—E. F., female aged 23. October, 1933. While going downstairs her right knee "gave way" but did not lock. This recurred on four occasions. February, 1934, patient noticed a swelling on the outer side of the knee; it gradually increased in size. There was no history of injury.

April, 1934: The cyst was removed with the anterior three-quarters of the semilunar cartilage.

CASE 4.—G. H., male aged 26, a clerk. In 1932 the right knee swelled up following football; this recurred on several occasions and caused pain. It always recovered with rest, but never locked. A history of a number of blows on both knees was obtained.

August, 1934: Mr. S. L. Higgs removed the cyst together with the external semilunar cartilage to which it was attached.

CASE 5.—I. J., male aged 26. March, 1933. While patient was playing football the right knee became painful on the outer side. The pain recurred a number of times so that he had to give up playing. Apart from vigorous exercise it was not painful.

September, 1934: The cyst and cartilage were removed by Mr. C. N. Morgan.

CASE 6.—K. L., male aged 24, a gas worker. May, 1934. Aching in the left knee and pain on bending were first noticed when walking. Patient was treated elsewhere for synovitis with rest for six weeks. There was little improvement and the knee remained painful, especially when resting. September, 1934, he noticed a swelling on the outer side of the joint. The knee never locked but it felt unsafe when at work on a ladder. There was no history of definite injury.

October, 1934: The cyst and most of the external cartilage were removed. Within a month the man was able to run upstairs and walk six miles, the pain having completely disappeared.

These cases have been followed up in September, 1935. All are completely free from symptoms, have full use of the knee, and no return of the swelling.

MORBID ANATOMY

Macroscopically, after removal at operation, these cysts are almost always seen to be multiple. They are small in size, varying from that of a pin's head to that of a pea. They are deep to the capsule of the joint and involve and are attached to—in fact are part of—the semilunar cartilage. They are situated on the outer convex border of the cartilage, usually about half-way along its antero-posterior length. When a cross-section of this part of the cartilage is examined the internal sharp concave border is seen to be normal and unaffected. As the section is followed outwards, the cartilage becomes a little thicker than normal, giving the appearance of being expanded with a softer central portion. In the outer part of the section a number of cysts are seen, bulging into the surrounding tissues, as well as involving the cartilage. Some of the cysts are separated from one another by a definite thickness of cartilage, while others are so close together, being separated only by the thinnest membrane, that they might be called multilocular. The cysts contain a somewhat thick,

DESCRIPTIONS OF ILLUSTRATIONS ON PLATE

DR. BARCLAY AND MR. BAIRD

FIG. III. (Case 1).—Unilateral fused kidney. Condition revealed by intravenous pyelography.

FIG. IV. (Same Case).—Intravenous pyelogram showing also two bougies passed into ureters.

FIG. V. (Case 2).—Duplication of pelves and ureters on right side. Retrograde pyelogram showing two catheters entering separate renal pelves.

FIG. VII. (Case 3).—Incomplete bilateral duplication of pelves and ureters.

FIG. VIII. (Same Case).—Calculi at lower end of right fused portion.

FIG. IX. (Case 4).—Complete unilateral duplication of pelves and ureters. Catheters in both ureters and uroselectan in upper pelvis.

FIG. X. (Case 5).—Ureteric obstruction. Intravenous pyelogram.

FIG. XI. (Same Case).—Intravenous pyelogram after bougie has passed the obstruction 2 cm. above ureteric orifice.

FIG. XII. (Case 6).—Renal ptosis with hydronephrosis.

mucoid, clear, colourless, or slightly brownish material. The remaining portions of the semilunar cartilage, anterior and posterior to the parts affected by cysts, appear to be normal, as do the adjacent articular surfaces of the tibia and femur.

The typical microscopical changes are as follows. Passing outwards from the normal fibrocartilage at the inner concave edge, we come to a region of scattered areas of mucoid degeneration (Fig. I. on Plate); a little further out may be seen a number of very small spaces with well-defined edges and containing material which takes up the hæmatoxylin stain—apparently mucoid substance. Further out are much larger but compressed spaces which are the collapsed cysts, some being as large as a pea and containing thick mucoid fluid. In some sections the arteries at the outer edges of the cartilage appear greatly thickened, almost to the degree of an obliterative endarteritis (Fig. II.).

THEORIES OF ORIGIN

Several hypotheses of origin have been put forward. Ollerenshaw has insisted that the cysts are lined by endothelium and believes them to be developmental in origin. Goldzieher, reporting on Kleinberg's case, describes the cyst as lined by a layer of flat endothelial-like cells and probably arising from lymph vessels. Fisher believes that these cysts are ganglia which originate between the peripheral surface of the external cartilage and the synovial membrane with which it is covered at this spot. Allison and O'Connor suggest that the cysts are the end-result of a degenerative process due to interference with the blood-supply of the cartilage. King concludes by saying that the cysts are compatible with ganglia. His views will be referred to later.

In support of the first two theories, viz., those in which a developmental or a lymphatic origin are propounded, a layer of endothelial cells lining the cysts has been described. A good deal of discussion has arisen in the past as to whether endothelial cells are present or not. A difficulty always liable to arise in studying microscopically a single layer of cells lining a cavity is that during the preparation and cutting of the section the cells may become detached and lost. However, in a number of published micro-photographs and drawings of sections of cysts of the semilunar cartilages, and in sections from a recent case, a layer of lining cells at first sight resembling endothelial cells is clearly seen. This, however, is only seen in the larger cysts. In the very small cysts no endothelial lining cells can be seen, although the cysts are still filled with mucoid material (Fig. III.). It is difficult to imagine that a layer of endothelial cells could become detached from the cyst-wall during the preparation of the section while the mucoid content of the cysts remains in position. The same observations as regards a true lining of cells in large as compared with small cysts have been made by Bristow. If the cells lining the cysts are studied carefully it may be observed that although they form a definite continuous layer they are not typical endothelial cells, and that, moreover, they are very similar to the cells in the immediately adjacent fibrocartilage (Fig. IV.). It is difficult to believe that these lining cells are a specific endothelium or that they are anything more than compressed cells from the surrounding fibrocartilage in which the cysts are situated. If an endothelium of developmental origin were present, one would expect not only to find it well-formed in the smaller cysts, but even more noticeable there than in the larger ones, where it would be flattened out owing to stretching. King, using several modifications of the silver impregnation method, was able to determine the actual type of cell lining the cysts because the silver methods allow a differentiation between connective tissue and endothelium. King says: "The larger cysts are lined by connective tissue and not by endothelium. This is apparent not only from the morphology in hæmatoxylin and eosin sections but also from the sections impregnated by silver. In these the surface material is seen in most cases to be actual fibrous tissue and the cells are embedded in the fibrous tissue stroma. A few lie on the surface but these do not constitute an endothelium."

It is difficult to believe that Fisher is right when he says that these cysts are ganglia originating between the peripheral surface of the cartilage and the synovial membrane because an examination of a complete section through a semilunar cartilage, where a cyst is present, shows changes not only in the outer edge of the cartilage but also in the deep parts and close to the inner concave margin. Microscopically some areas of degeneration can be seen surrounded by normal cartilage and separated from the periphery of the meniscus. In view, therefore, of the facts that the cysts do not possess an epithelial or endothelial lining and that degeneration is found commencing deeply in the cartilage, the pathology must be considered to be one of *primary mucoid degeneration* of the cartilage. The cause of this degeneration is, however, not clear. Although an endarteritis is frequently seen in sections of this condition, it does not seem to account, as Allison and O'Connor suggest, for a degeneration of cartilage, a tissue which has few or no blood-vessels in it. It is not possible to blame trauma as the actual cause of this degeneration, either on clinical or pathological grounds. No similar degeneration of cartilage following trauma is seen elsewhere in the body, although it is frequently subjected to injuries, both severe and slight.

TREATMENT

Most patients come for treatment owing either to pain or disability; few come only because of the presence of a swelling. Conservative treatment gives only temporary relief from symptoms until activity is resumed. Therefore, if pain or disability is sufficient to demand treatment, removal by operation is the only satisfactory measure. The pathological change is primary in the cartilage, therefore cysts will recur if only the macroscopic cysts are removed; the semilunar cartilage itself must be taken away also. Through a curved skin incision the fascia lata near its insertion is incised and the cyst is exposed. It is dissected from the surrounding tissues, the joint opened, and the semilunar cartilage exposed; as much of the latter as possible is then removed with the cyst attached.

RESULTS

The end-results after operation, provided there are no changes in the adjacent articular cartilage or bone, are excellent. There are neither pain, weakness, nor any disability in the joint, and the patient can use his limb fully for any games.

I have to thank Mr. Higgs and Mr. Morgan for allowing me to examine the specimens removed in Cases 4 and 5. For permission to operate on the other cases my thanks are due to Prof. G. F. Gask.

REFERENCES.

1. Allison, N., and O'Connor, D. S.: Surg., Gyn., Obst., 1926, xlii., 259.
2. Bristow, W. R.: In the Robert Jones Birthday Volume, 1928, p. 269.

(*Continued at foot of opposite page*)

THE INCIDENCE OF CONGENITAL ABNORMALITIES IN THE GENITO-URINARY TRACT

AS SEEN IN 500 CONSECUTIVE INTRAVENOUS PYELOGRAPHIES

BY I. B. BARCLAY, M.R.C.S. Eng., D.P.H., D.M.R.E.
RADIOLOGIST, SELLY OAK HOSPITAL, BIRMINGHAM; AND
J. B. BAIRD, M.C., M.B. Glasg., F.R.C.S. Eng.
SURGEON TO THE HOSPITAL

(WITH ILLUSTRATIONS ON PLATE)

THE literature of congenital abnormalities of the kidneys and ureters lays great emphasis on their rarity. Our experiences at Selly Oak Hospital, using the more recent methods of urological investigation, suggest that such abnormalities are commoner than has been realised. Reviewing 500 consecutive cases referred for intravenous pyelography we have found the following congenital and other abnormalities:

(*a*) Unilateral fused kidney showing two normal ureteric orifices with the left ureter crossing to the right side.
(*b*) Congenital absence of left kidney with complete reduplication of pelves and ureters of right kidney.
(*c*) Six cases of bilateral double ureters and pelves (two with complete reduplication and four with incomplete).
(*d*) Seven cases of unilateral double ureters and pelves (two with complete reduplication and five with incomplete).
(*e*) A case of probable valvular ureteric obstruction.
(*f*) Two cases showing unilateral true renal ptosis.

Many writers have stated that unilateral fused kidney is extremely rare. Some object to this term because the kidneys, though crossed, may be fused only by fibrous tissue and prefer the term "crossed renal dystopia." But as it is highly unlikely that the second kidney ever lay on the opposite side—which means that it never crossed the midline—this expression is even less fortunate. "Unilateral fused kidney" is at little variance with accepted embryological findings and is a sufficiently accurate clinical term.

Pierson[1] states that up to 1932 only 103 cases were recorded. Stewart and Lodge found only one example in 6500 post-mortems; Henry Morris found one in 15,908 post-mortems. Our own series of 500 consecutive cases show one well-defined example of this condition, and one other case, which at first we thought to be unilateral fused kidney, but which we now think combines the two anomalies—viz., congenital absence of one kidney, and complete reduplication of pelves and ureters of the remaining kidney. While recognising that it is not fair to compare a routine series of cases seen at autopsy with a series of cases referred because of possibly urological signs or symptoms, the occurrence of two such cases in one year at one hospital suggests that the frequency of the condition has been underestimated.

[1] Pierson, L. E.: Amer. Jour. Urol., 1932, xxviii., 217.

(*Continued from previous page*)

3. Ebner, A.: Münch. med. Woch., 1904, li., 1737.
4. Fairbank, H. A. T., and Lloyd, E. I.: Brit. Jour. Surg., 1934, xxii., 115.
5. Fisher, A. G. T.: Internal Derangements of the Knee-joint, London, 1924.
6. King, E. S. J.: Surg., Gyn., Obst., 1931, liii., 606.
7. Kleinberg, S.: Jour. Bone and Joint Surg., 1927, ix., 323.
8. Ollerenshaw, R.: Brit. Jour. Surg., 1929, xvi., 555.

In order fully to appreciate the conditions we have found it is necessary to go into certain embryological and pathological considerations.

The cortex or secreting part of the kidney—i.e., the part from glomerulus to convoluted tubule—is formed from the most caudal part of the intermediate cell mass, but the "conveying" part of the kidney (the collecting tubules, the calyces, pelvis, and ureter) is an outgrowth from the lower end of the Wolffian duct. In early embryonic life these structures lie side by side low down in the pelvis. The "outgrowth" or bud develops several branches, which are enveloped by the growing cortex or metanephros. These terminal branches are the collecting tubules of the permanent kidney. At an early stage the renal pelves and ureters lie anteriorly, but as the ureter grows cranially the kidney moves with it from pelvis to abdomen and as it does so the metanephros swings laterally and the pelvis mesially. At the end of the second month rotation into the permanent relative positions of cortex and pelvis has taken place, and by the fifth month migration upwards to loin has been accomplished; thereafter the ureter lengthens by growth caudally, not by cranial migration of the kidney.

As budding ureters and metanephros lie adjacent in the pelvis, in their earliest weeks, adjacent blood-vessels supply both, and as they climb the "ladder" to the loin they acquire new vessels at each new level. When migration has ceased most of the temporary vessels disappear but others remain to supply the structures at different levels—e.g., the inferior vesical, spermatic, and renal arteries.

Such being the normal, how is one to explain the production of (1) unilateral fused kidney, (2) renal agenesis, and (3) double ureters and pelves?

UNILATERAL FUSED KIDNEY

One cannot do more than make as good a guess as possible at what happens. There are only two broad possibilities:—

(*a*) The renal masses fuse before migration; "then if this fused mass remains in the pelvis we get the pelvic fused kidney. Migration may carry the fused mass to either side or to the midline, so causing either unilateral fused kidney or horse-shoe kidney. Any extreme variation of blood-supply is not surprising." (Pierson.[1])

(*b*) The kidneys develop in the normal situation and are subsequently displaced by some mechanical factor. This appears very unlikely on general grounds, but in its favour is the fact that unilateral fused kidney, unlike congenital absence of one kidney, is never associated with developmental abnormalities of the gonads, adrenals, or other structures derived from the Wolffian body and genital ridge.

Unilateral fused kidney is commoner on the right side. This may be due to rotation of the embryonic mesentery (Pierson).

It is interesting to contrast with unilateral fused kidney the congenital absence of one kidney. In the latter condition either duct fails to give off any ureteric bud on that side, or the bud fails to develop and the adult ureter is represented by a mere fibrous cord. There would, therefore, be either no ureteric orifice at all on the side concerned or at most there would be an abnormally small and blind one; whereas in a unilateral fused kidney there are always two normal ureteric orifices.

The case classified in Group B seems more likely to be a case of renal agenesis on the left side and complete reduplication on the right side, rather than one of right unilateral fused kidney; for the ureteric orifices, as seen cystoscopically and as shown on

the skiagram, are within ½ in. of each other and are both definitely on the right side of the bladder. No ureteric orifice could be found on the left side, and though there was a very good efflux from both the right ureteric orifices, no blue came from any other opening.

In cases of unilateral fused kidney neither cystoscopy nor chromocystoscopy indicates the absence of a kidney on one side, because the ureteric orifices occupy their normal positions in the bladder. It has occasionally happened indeed that the whole renal mass, only part of which has been diseased, has been removed, the operator trusting to what he considered a good blue efflux from a kidney on the other side, for the maintenance of renal function. Hence the desirability of complete urological examination, and, especially of intravenous pyelography, which should, we think—were it not for the expense—be always an initial attack on a possibly urological case.

DOUBLE PELVES AND URETERS

As regards double ureter, there are again only two possibilities: either (*a*) there are two separate buds—which theory alone can explain two ureters separate in their whole length—or (*b*) a single ureteral bud divides into two at any point between its origin and the kidney (which explains the ureter which is single near the bladder, but double higher up). Also, as the ureteric expansions are separate, so are the cortical masses that envelop them; so that if there are two ureters there are also two distinct kidneys, fused together.

Several practical points are worth noting in cases of incomplete reduplication of the ureter, arising out of the fact that a ureteric catheter passes usually into the pelvis of the upper kidney and not into the lower.

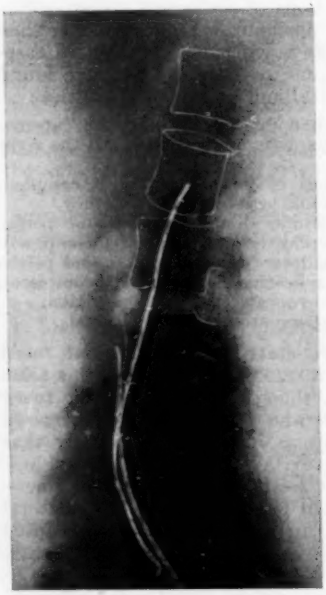
(1) Retrograde pyelography will give a small shadow, highly placed, of the pelvis. This, when compared with the large *renal* shadow present, should make one suspicious and indicate that an intravenous pyelogram should be done as well.

(2) If the lower pelvis is infected the catheter may obtain an uninfected urine from the upper pelvis, and unless the presence of the lower kidney is suspected the result will be very misleading. The recovery of clear urine by catheterisation when purulent urine has previously been obtained should not be regarded as a sure sign that the infection has cleared up.

DOUBLE URETERS AND PELVES

Most writers state that the ureter from the lower kidney crossed in front of that from the upper (usually low down), and that its orifice is always above and outside that of the upper ureter. This finding has not been borne out in our series of cases. We have found by study of lateral views with an opaque bougie in each ureter that no reliance can be placed on any assumption as to their relative positions.

Fig. I., for example, shows an upper ureter which lies at first posterior to the lower one and then crosses to lie anteriorly, at the level of the upper border of the fifth lumbar vertebræ, crossing again to lie posteriorly at the upper level of the first sacral segment, and finally crossing once more at the level of the third sacral segment. Again Fig. II. shows an upper ureter lying anteriorly at its origin, but crossing the lower at the level of the first sacral segment to lie posteriorly for the remainder of its course. The importance of these anatomical findings from the surgical viewpoint is obvious.



FIGS. I. and II.—Described in text.

Case Records

We can now briefly consider the cases under review.

A.—UNILATERAL FUSED KIDNEY

CASE 1.—Mrs. A, aged 34, was admitted on July 1st, 1935, complaining of three weeks' pain on micturition. It was severe and was preceded by pain in the right loin, which had been coming round to the front for two weeks. Frequency about two-hourly. Urine on admission: cloud of albumin; mass of pus cells and blood corpuscles deposited; no casts; *Bacillus coli communis* on culture.

Intravenous pyelography (Fig. III. on Plate) showed no renal outline or function on the left side; on the right there was a double renal pelvis with a large kidney outline, and the lower ureter crossed to left side in pelvis. Cystoscopy on July 15th, after rest and treatment, showed mild cystitis in a bladder of good capacity. The ureteric orifices were in normal positions and of normal shape. Indigo-carmine (5 c.cm.) produced a good efflux from both ureteric orifices beginning in five minutes and regularly repeated. Later opaque bougies were passed up the two ureters and an intravenous pyelogram was taken. This confirmed the anatomical diagnosis (Fig IV. on Plate).

On her discharge the patient had no symptoms and her urine was sterile.

B.—CONGENITAL ABSENCE OF LEFT KIDNEY WITH COMPLETE DUPLICATION OF PELVES AND URETERS ON RIGHT SIDE

CASE 2.—A woman aged 21, with no noteworthy previous illnesses, was admitted complaining of pain in the back and right loin of four days' duration. Temp., 99·4° F.; pulse-rate, 80; respirations, 20. She had vomited on the day before, but had no dysuria. The abdomen showed no rigidity and there was no special tenderness over the right kidney either in front or behind; very slight deep tenderness was left over the right iliac fossa.

Intravenous pyelography showed no renal outline or

function on the left side in 30 minutes. On the right the renal outline was large and there were complete double pelves and ureters. Retrograde pyelograms (Fig. V. on Plate and Fig. VI.) show clearly the two opaque catheters emerging from two separate ureteric orifices and passing up to the separate renal pelves. Chromocystoscopy showed double right ureteric orifices, the inner of which was more active than the outer, though both showed good efflux; the orifices were about ½ in. apart. There was no evidence of any left ureteric orifice. Retrograde pyelography along both ureters confirmed intravenous findings.

It should be borne in mind that the radiographic appearances do not necessarily give the degree of true fusion present in any case; there may be complete continuity of cortical tissue or merely two separate kidneys held loosely together by connective tissue. In both the above cases, however, the renal outline was seen to be continuous, and so far as can be gathered there was true renal fusion. In both these cases there was an infection of the lower pelvis but not of the upper one; this characteristic has been noted by previous writers.

C.—BILATERAL DOUBLE URETER

The six cases in this group may be tabulated as follows:—

Complete Duplication (2)

Sex and age.	Clinical findings.	Observations.
M., 16	Pyelitis right lower pelvis.	Discharged, urine sterile.
F., 23	Pyelitis left lower pelvis.	,,

Incomplete Duplication (4)

M., 34	Small calculus below fusion of ureter, right side, with hydronephroses lower pelvis.	Calculus passed. Recovery.
F., 28	Nil definite found.	—
F., 42	Pyelitis lower pelvis.	Recovery. Discharged, urine sterile.
F., 21	Enlarged upper right ureter with two faceted calculi below the fusion just above right ureteric orifice. (Case 3: Figs. VII. and VIII. on Plate).	Calculi removed by vesical route. Uneventful recovery.

D.—UNILATERAL DUPLICATION OF PELVES AND URETERS

In this group there were seven cases:—

Complete Duplication (2)

Sex and age.	Side.	Clinical findings.	Observations.
F., 20	R.	Pyelitis lower pelvis.	Discharged, urine sterile.
F., 28	L.	Hydronephrosis, &c., *upper* pelvis with pyelitis, poor function lower pelvis (Case 4: Fig. IX. on Plate shows catheters in both ureters and Uroselectan in upper pelvis).	Discharged relieved.

Incomplete Duplication (5)

F., 10	R.	Nil definite.	
F., 19	R.	Pyelitis right lower pelvis.	Discharged, urine sterile.
M., 26	R.	Nil definite.	—
M., 28	L.	Pyelitis both pelves, poor function.	Discharged relieved.
F., 35	R.	Pyelitis lower pelvis with some dilatation of ureter.	Discharged, urine sterile.

It will be noted that (*a*) out of 13 patients with double ureters, &c., 9 were female and 4 male;

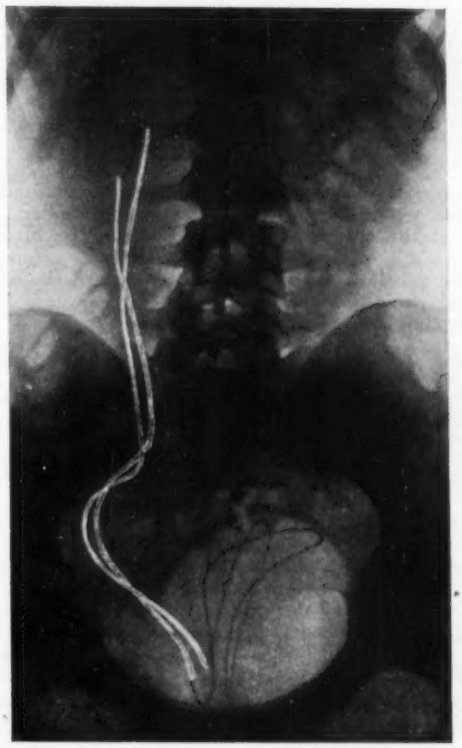


FIG. VI. (Case 2).—Opaque bougies passed through the separate ureteric orifices. (Course of bougies has been made clear.)

(*b*) in 9 cases showing proved pyelitis, the lower pelvis was alone involved 7 times, the upper pelvis alone once; (*c*) in 7 cases of unilateral duplication 5 were on the right side and 2 on the left.

E.—URETERIC OBSTRUCTION—PROBABLY VALVULAR

Other congenital abnormalities of the ureter appear to be rare and therefore of some interest. We consider the following case a striking example of an uncommon type of abnormality.

CASE 5.—Female, aged 22. Frequency of micturition throughout her life. Intravenous pyelography (Fig. X. on Plate) showed on the right side well-marked enlargement of calyces and pelvis with dilatation of the ureter, increasing to the level of the upper border of the first sacral segment. At this level the ureter, about 1·5 cm. in diameter, was seen to be well filled with the dye and showed a sharp semicircular, concave border with the concavity downwards at the site of obstruction; no further delineation of the ureter below this level was discernible on the intravenous pyelographic examination. The opposite side appeared normal.

Cystoscopy showed some cystitis with normal ureteric orifices; an opaque bougie was felt to hitch approximately 2 cm. from the right ureteric orifice. After eventually passing this obstruction the bougie was passed up to the renal pelvis and simultaneously a second intravenous injection of uroselectan was given (Fig. XI. on Plate). It is interesting to note that at approximately the level of the obstruction, just above the ureteric orifice, the ureter itself is seen to be enlarged for approximately an inch. When the bougie was withdrawn very purulent urine was discharged. This urine showed a large mass of pus cells and organisms. The kidney was removed together with the ureter to the level of the upper border of the fifth lumbar vertebra. Unfortunately it was not possible to take the ureter to the level of the obstruction as seen in the intravenous pyelogram. When examined

later the ureter was seen to be much hypertrophied with the wall increasing in thickness from the pelvi-ureteral junction downwards. There was no obvious evidence of valves in the specimen under observation, though it is difficult to explain the appearances found upon any other suggestion. There was no question of calculus being present either during the time the patient was under observation or (so far as we can ascertain) at any time previously.

Valves in the ureter are well known at the junction of the pelvis of the kidney with the ureter, and also at the entrance of the ureter into the bladder. We have been unable to find any definite references to the presence of valves in other parts of the ureter giving rise to obstruction.

In view of—

(1) The definite obstruction demonstrated by intravenous pyelography;

(2) The difficulty encountered in passing an opaque bougie along the initial 2 cm. of the ureter above the ureteric orifice;

(3) The dilatation of the ureter just above the orifice as depicted in the intravenous pyelogram combined with the opaque bougie (Fig. XI.);

(4) The passage of the purulent urine upon withdrawal of the bougie (i.e., through the upper obstruction);

(5) The fact that all the disease discovered appeared above the level of the first obstruction;

(6) Her lifelong history of frequency of micturition;

(7) And the well-marked hypertrophy of the ureter, with no present or obvious evidence of any calculus being present,

we suggest that our findings are those of partial obstruction arising out of the presence from birth of abnormal valves in two locations: (*a*) just above the ureteric orifice; (*b*) in the ureter at the level of the first sacral segment.

F.—RENAL PTOSIS

Throughout our series only two cases have shown definite evidence of ptosis of one kidney. Slight differences of level in the upper or lower poles during inspiration and expiration have been noted, but in these two cases only has there been any anatomical state of true ptosis. The patients were both women and both had well-marked pyelitis; in one of them, aged 51, there was also definite hydronephrosis (Fig. XII. on Plate).

We feel that a series of 500 cases showing such abnormalities as have been described would have demonstrated a large number of "dropped" or "floating" kidneys if such a condition was fairly common, especially as most of our cases are drawn from the poorest inhabitants of Birmingham, some of whom have been unemployed and have probably found it extremely difficult to obtain sufficient food. We therefore suggest that the condition of true renal ptosis, demanding or even suggesting nephropexy, is far less common than some authorities would lead us to suppose.

We desire to express our thanks to Dr. A. M. Nussbrecher for his helpful suggestions upon the case of congenital ureteral obstruction, and to Mr. E. Alexander, head technician of the X ray department, Selly Oak Hospital, for his careful preparation of the prints illustrating some of our cases.

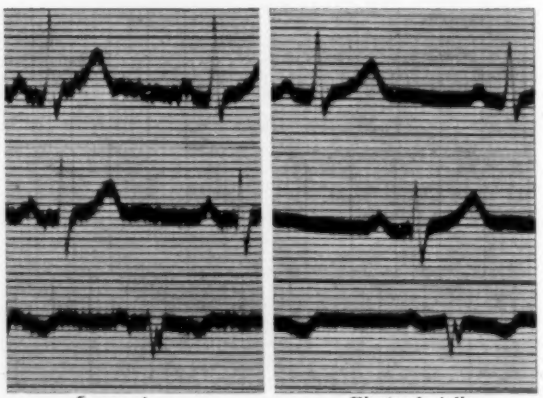
NEW SANATORIUM AT BOURNEMOUTH.—Bournemouth town council is considering the provision of a new sanatorium and an option to purchase some 48 acres of land at Canford Magna for this purpose is being secured.

THE USE OF "CAMBRIDGE ELECTRODE JELLY"

BY H. B. RUSSELL, M.D., M.R.C.P. Lond.
MEDICAL OFFICER IN CHARGE OF THE CARDIOGRAPHIC DEPARTMENTS OF ST. THOMAS'S AND THE ROYAL MASONIC HOSPITALS

IT is of great importance, when an electrocardiograph having a string galvanometer is in use, to obtain an efficient electrical connexion between the patient and the machine. The resistance of the string is in the neighbourhood of 3000 ohms; for efficient working the resistance of the patient should not exceed this value and for preference should be considerably less. If the resistance of the patient is high, in order to standardise the machine, the fibre has to be made unduly sensitive; this results in an increase in deflection time and consequent distortion of the electrocardiogram.

The electrodes in common use can be divided into two groups, the "immersion" and the "bound on" varieties. Up to the present, the former have been the more satisfactory, as it has been difficult, when using the latter, consistently to obtain an efficient connexion of low resistance. The use of "Cambridge electrode jelly"* seems to be a great advance on anything that has been tried previously; it yields, as



Immersion. Electrode jelly.

Two electrocardiograms from the same patient (Case 14) showing the results obtained with immersion electrodes and with Cambridge electrode jelly.

will be seen later, results that compare favourably with those given by immersion electrodes—and therefore, it may be assumed, with those given by bound-on electrodes such as "saline pads." It enables electrodes that are much smaller in size than heretofore to be used efficiently. The jelly is sterile, soluble, and colourless, and it has quite an agreeable odour.

Method of application.—No previous preparation of the limbs is necessary. A small portion of jelly—about the size of the finger-nail—is squeezed on to the forearms and left leg and rubbed over an area as large as the electrode that is to be used. The rubbing, which should be quite gentle, is continued for about ten seconds until a faint flush appears on the skin; no irritative after-effects have been noted, even on a skin where varicose eczema was present. The electrode is placed over the prepared area and gently strapped in position; it is only necessary to have this strap sufficiently tight to prevent the electrode from slipping.

* Made by the Cambridge Instrument Co., Ltd., London.

The actual form of electrode is of no great import. The following tests were made with small German silver electrodes, each having an area of a little over 3 sq. in., but other forms do equally well (e.g., Kohn electrode). Actually, the resistance falls slightly with electrodes having a larger area.

Nature of the test.—Twenty-five cases were taken at random; these were the ordinary patients sent to the department for an electrocardiogram. Each case had two tracings taken, one with immersion electrodes and one with electrode jelly, the results being shown in the accompanying Table. The machine used was the trolley type of Cambridge string galvanometer. Before each lead of each electrocardiogram was taken, the machine was carefully standardised to give the usual 30 mm. deflection when an E.M.F. of 3 millivolts was thrown into the circuit. The actual deflection in mm. is given in each case in the following Table: the resistance of the patient can be easily calculated from the following formula. The resistance of the fibre in use was 3100 ohms.

$$R = \left(\frac{R_1}{R_2} \times \frac{R_3}{1}\right) - R_3$$

Where R_1 = deflection of galvanometer without patient connected.

R_2 = deflection of galvanometer with patient connected.

R_3 = resistance of fibre.

No.	Type of electrocardiogram.	Deflection in mm.					
		Jelly.			Immersion.		
		1	2	3	1	2	3
1	T_2 and T_3 inverted ..	15	20	15	18	18	18
2	Abnormal Q R S_3 ..	20	20	18	15	15	15
3	Normal	18	18	16	18	18	16
4	Normal	20	20	18	16	16	16
5	Auricular flutter	17	17	15	17	17	17
6	Normal	25	25	25	20	20	20
7	Auricular fibrillation: notched R_2	20	20	20	14	14	14
8	Normal	20	20	20	20	20	20
9	Normal	21	21	21	15	15	15
10	Displacement of R-T_1 & $_2$	20	20	20	15	15	15
11	Normal	22	22	22	20	20	20
12	Ventricular extrasystoles	20	18	18	15	15	15
13	L. axis deviation ..	18	18	18	20	20	20
14	L. axis deviation ..	20	20	20	17	15	15
15	Normal	20	22	20	18	18	18
16	Normal	20	20	20	20	20	20
17	Auricular fibrillation ..	22	22	22	18	16	16
18	Bundle branch block ..	20	20	20	20	20	20
19	Coronary thrombosis type	20	20	20	15	17	15
20	Paroxysmal tachycardia .	18	18	18	15	15	15
21	Auricular fibrillation ..	22	22	22	20	20	20
22	R_2 notched	22	20	20	18	18	18
23	Normal	18	18	16	18	18	16
24	Auricular fibrillation ..	18	18	18	20	20	20
25	Normal	20	20	20	15	17	15

It will be noticed that the jelly connexion gave a lower resistance in 16 cases (64 per cent.); in 5 cases (20 per cent.) the resistance was the same as with the immersion electrodes, while in the remaining 4 cases (16 per cent.) the resistance was higher. In many instances the connexion whilst using the jelly was greatly superior and in none was it inferior to any material extent.

There are, however, many other advantages to be gained by the use of the jelly. In the first place, it does not matter whether the patient is sitting or lying down; with immersion electrodes the former position is practically essential. Secondly, somatic tremor is almost always much reduced. The Figure illustrates this point. Thirdly, it is not necessary for the patient to keep so still; I have taken a perfectly satisfactory "lead I." from my assistant whilst he was walking slowly about the room! Talking has practically no effect on the fibre. At no time was any sign of polarisation evident (as shown by "wandering" of the fibre).

One disadvantage of immersion electrodes is a tendency to spill saline or possibly zinc sulphate solution on the surrounding floor, an accident which may interfere with effective insulation of the patient. No such trouble is experienced when jelly is used. For use on bed cases, too, the absence of liquid solution has obvious advantages. Another minor advantage of the jelly over the "pots" is that it is unnecessary for the patient to remove his boot.

Immersion electrodes are ugly, and if they are unnecessary their removal is doubtless an advantage. The introduction of electrode jelly as a substitute is a useful contribution to electrocardiography.

Clinical and Laboratory Notes

DOUBLE PYOSALPINX DUE TO SALMONELLA NEWPORT INFECTION

By Dorothy Brown, M.B. Sheff.
LECTURER IN BACTERIOLOGY IN THE UNIVERSITY OF SHEFFIELD

The patient, a married woman of 26, had had no children and no abortions. There was no history of severe illness.

Present Illness.—She first felt ill on Dec. 1st, 1930, her symptoms being backache and attacks of slight shivering. These continued for four days, but were not severe enough to prevent her working. On Dec. 5th she was seen by her own doctor and was found to have pyrexia and slight tenderness in the lower abdomen, then attributed to the onset of menstruation. She remained in bed but the symptoms continued, and after about 18 days a definitely tender area was apparent in the lower abdomen. She was therefore transferred to the Jessop Hospital for Women, Sheffield.

On admission (Dec. 22nd) she had a temperature of 101·6° F. and a pulse-rate of 128. A tender area was found just above the brim of the pelvis, the tenderness being greater to the left of the midline and extending to the left iliac fossa. Per vaginam, a hard, immobile swelling was found in the pouch of Douglas.

At *operation* on Dec. 30th a large left pyosalpinx and a smaller right pyosalpinx were found and drained. As clinically the condition appeared tuberculous, some of the pus was sent to the laboratory for bacteriological examination and guinea-pig inoculation. During the 17 days immediately following the operation the temperature and pulse gradually returned to normal. She went home on Jan. 30th with only very slight discharge and feeling well. Throughout her illness she never experienced headache, acute abdominal pain, diarrhœa, constipation, nausea, or vomiting; the backache, abdominal tenderness, and pyrexia were her only symptoms.

EXAMINATION OF PUS

(*a*) A direct film preparation showed the presence of numerous pus cells and Gram-negative bacilli.

(*b*) On culture a pure growth of a motile Gram-negative bacillus was obtained. It fermented glucose, maltose, mannitol, dextrin, and xylose with the production of acid and gas. It had no action on lactose, saccharose, adonitol, inositol, or inulin. The Voges-Proskauer reaction was negative, and there was no indole production. Litmus milk was turned faintly acid then alkaline.

In order to identify the organism agglutination tests were performed with Oxford standard specific agglutinating sera for *Salmonella paratyphi* A, *S. paratyphi* B, *S. enteritidis* Gaertner, *S. aertrycke*, and *S. newport*; but it was not agglutinated by any of these. The bacillus was therefore subcultured daily in broth, and after three

weeks it was found to be agglutinated by *S. newport* (H.sp.) serum in dilutions of from 1/25 to 1/250.

(c) A portion of untreated pus was inoculated subcutaneously into two guinea-pigs. Both animals developed an abscess at the site of inoculation in the course of a week to ten days, and from the pus a pure growth of a bacillus corresponding in every respect with the original organism was obtained. A portion of pus treated by the antiformin method was inoculated subcutaneously into two guinea-pigs. These developed no local lesion, nor did they show any evidence of tuberculosis when killed six weeks later.

AGGLUTINATION TEST

As soon as it was realised that the causal organism was probably of the salmonella group, agglutination tests were performed with the patient's serum (Jan. 6th). No agglutination of Oxford standard agglutinable cultures of *S. typhi*, *S. paratyphi* A, *S. paratyphi* B, *S. enteritidis* Gaertner, or *S. aertrycke* occurred in any dilution, but *S. newport* was agglutinated in dilutions of from 1/25 to 1/500. A second series of agglutination tests performed on Jan. 29th showed that the titre for *S. newport* had fallen to 1/250.

ANTIGENIC ANALYSIS

It was concluded from the above that the organism was a *Salmonella newport* and agglutinin-absorption tests were therefore performed to confirm this.

A. *Specific Phase.*—Specific phase emulsions and sera (rabbits') were prepared from the strain 2703 (isolated from the patient) and from strains of *S. newport* and *S. reading*. Each of the three sera was absorbed separately with each organism, and in every case the specific agglutinins were entirely removed.

The original titre of each specific serum was 1/10,000.

B. *Non-specific Phase.*—Non-specific phase emulsions and sera (rabbits') were prepared from strain 2703 and from strains of *S. newport* and *S. aertrycke*, and reciprocal agglutination and agglutinin-absorption tests were performed. The accompanying Table shows the results.

Results of Agglutinin-absorption Tests

Non-specific serum.	Emulsion.	Original titre.	Percentage absorption after absorption with—		
			2703 non-specific.	Newport non-specific.	Aertrycke non-specific.
2703	2703	1/10,000	100·0	87·5	95·0
	Newport	1/2,500	100·0	100·0	100·0
	Aertrycke	1/2,500	100·0	100·0	100·0
Newport	2703	1/10,000	100·0	100·0	100·0
	Newport	1/50,000	97·5	100·0	100·0
	Aertrycke	1/50,000	95·0	100·0	97·5
Aertrycke	2703	1/2,500	100·0	100·0	100·0
	Newport	1/20,000	75·0	100·0	100·0
	Aertrycke	1/20,000	87·5	97·5	100·0

In the case of both the specific and non-specific phase the emulsions were prepared from colonies selected as described by Bruce White.[1]

C. *Somatic Phase.*—Somatic emulsions and sera (rabbits') were prepared from strain 2703, and from strains of *S. newport* and *S. morbificans-bovis*. Reciprocal agglutination and agglutinin-absorption tests were performed with these. In the case of each serum the somatic agglutinins were entirely removed by absorption with each of the organisms.

The original titres of the sera were 1/1000 in the case of strains 2703 and *S. morbificans-bovis*, and 1/500 in the case of the *S. newport* strain.

The emulsions were prepared by growing the organisms on phenol-agar and then treating them with alcohol as described by Muir and Ritchie.[2]

Discussion of Results of Antigenic Analysis.—The specific phase of strain 2703 was proved to be identical with that of the strains *S. newport* and *S. reading* = D_1D_2 (Bruce White's classification). The non-specific phase showed a slight difference from that of *S. newport* and *S. aertrycke*. There was apparently a minor factor present in 2703 not found in the others, and, on the other hand, in the non-specific phase of both *S. newport* and *S. aertrycke* there appears to be some antigenic fraction which is not present in the strain 2703. The somatic antigen was shown to be identical with that of *S. newport* and *S. morbificans-bovis* = IV. (Bruce White's classification).

OTHER INVESTIGATIONS

A *blood sample* was taken for culture but was found to be sterile, as was to be expected so late as the fifth week of illness.

Specimens of *fæces and urine* were cultured but no organism of the salmonella group could be recovered from them.

The *source of infection* could not be traced. The patient helped her husband in a sweet and tobacco business and they had no assistants. She did all the housework and cooking herself. They rarely visited others or received visitors. They could not recollect sharing a meal with any other person for some weeks previously. The husband was apparently healthy. He had had no serious illness nor could he recollect even slight indisposition during the last few months. Agglutination tests performed with his blood-serum against the chief members of the salmonella and dysentery groups proved entirely negative.

This case is of interest in that, as far as I know, it is the only recorded case of abscess-formation due to *Salmonella newport*.*

I am indebted to the late Mr. W. W. King for the clinical history of this case.

REFERENCES

1. White, P. B.: Medical Research Council's System of Bacteriology, London, 1929, vol. iv., p. 111.
2. Muir, R., and Ritchie, J.: Manual of Bacteriology, London, 1932, p. 134.

INTUSSUSCEPTION DUE TO INVAGINATION OF A MECKEL'S DIVERTICULUM

By Gordon Duncan, M.B. Lond.

ACTING MEDICAL OFFICER, HILLINGDON COUNTY HOSPITAL, MIDDLESEX

A boy, aged 9 years, was admitted to hospital complaining of abdominal pain of five days' duration. The pain was generalised and colicky, and he was said to have had a similar but less severe attack five weeks previously. At the onset, five days before admission, he had vomited once, and he vomited bile-stained material on arriving in the ward. His bowels were open the day before admission and there was no history of passage of blood per rectum.

On examination a tender mass, both visible and palpable, was found filling the right iliac fossa. A diagnosis of appendix abscess was made and Ochsner-Sherren treatment adopted. Twelve hours later the mass had shifted to the midline and the patient's condition was worse. The abdomen was opened by a right paramedian incision and an ileo-ileal intussusception was found. Reduction was fairly easily performed, but about 12 inches of gut, comprising the intussusceptum, was gangrenous and the intussuscipiens was plum-coloured but viable. A Meckel's diverticulum, 3 inches long, was found invaginated into the lumen of the bowel and formed the apex of the intussusception. The patient was considered to be too ill to stand resection, so the ileum above and below the affected gut was brought together and lateral anastomosis was performed.

* The strains of *S. newport*, *S. aertrycke*, *S. reading*, and *S. morbificans-bovis* used were obtained from the National Collection of Type Cultures. They were as follows: *S. newport*, No. 129 (Newport); *S. aertrycke*, No. 74 (Mutton); *S. reading*, No. 72 (Reading); *S. morbificans-bovis*, No. 2215.

The gangrenous loop was left out of the abdomen and the wound partially closed. On the third morning after operation the bowels acted well and the patient's general condition was good. On the fifth day the gangrenous gut was resected and the bowel ends closed. A corrugated rubber drain was inserted and the wound closed. The patient is now convalescent.

I am indebted to Dr. W. A. Steel, medical superintendent, Hillingdon County Hospital, for permission to publish this case.

TORSION OF THE SPLEEN

ASSOCIATED WITH RUPTURE

By Y. Cantin, M.R.C.S. Eng.

MEDICAL SUPERINTENDENT OF THE CIVIL HOSPITAL, PORT LOUIS, MAURITIUS

Torsion of the spleen as a cause of the "acute abdomen" is hardly a surgical rarity, especially in the tropics, where enlarged and mobile spleens are common. The following case is remarkable, however, because torsion was associated with rupture and intraperitoneal hæmorrhage.

The patient, aged 50, was referred to us on May 22nd, 1934, from a mental hospital. She had fallen ill on the 20th, when she complained of colic; her bowels had not been opened for two days and the pulse-rate was 132. Nothing abnormal could be found in the abdomen and she was given an enema with a good result. On the 21st her temperature was 100° F., she had rigors, vomited twice, still complained of abdominal pain, and had a pulse-rate of 150. An enema was given on the 22nd with poor result, and when the patient was admitted to the Civil Hospital on that day her condition was as follows: Temp., 100·4° F.; pulse 120, fairly full; tongue furred but moist; features rather drawn. Abdomen moves well with respiration. No distension. No visible peristalsis. A swelling could be made out in the umbilical region, but careful palpation was impossible as the patient was restless and wanted to be left in peace. Vaginal examination revealed some fullness and tenderness in the pouch of Douglas.

Although the exact diagnosis was in doubt operation seemed essential. When the patient was under the anæsthetic, abdominal palpation revealed a firm, mobile, central swelling stretching across the umbilical region towards the right; the right iliac fossa felt quite normal. A right paramedian subumbilical incision was made and as soon as peritoneum was nicked blood welled out of the abdomen; about ten ounces was, by means of a rubber tube, collected into sodium citrate solution for subsequent transfusion into the patient. The peritoneal incision was then enlarged in an upward direction, and the spleen came into view, with a fissure about two inches long and a quarter of an inch deep over its convex surface. Well-marked plastic peritonitis was present, and the organ was adherent to neighbouring intestinal coils and to the large omentum. The adhesions were easily separated and the spleen, which was about four times the normal size, was easily exposed. Its pedicle was then found to be twisted through three and a half turns in a counter-clockwise direction. Splenectomy was performed in the usual way; the splenic vessels were thrombosed, and the spleen itself acutely congested. Whilst clearing the pelvis from blood clot, an ovarian cyst, about the size of a tangerine orange, was discovered on the left side and easily removed. The abdomen was closed without drainage and the patient made an uneventful recovery.

What was the mechanism of the rupture? An infarcted spleen may rupture spontaneously or from slight violence. In reporting a case, Collins Warren[1] writes: "It would seem highly probable that distension of the capsule nearly to the bursting point by the cutting off of the egress of the blood by thrombosis of the splenic vein had prepared the way for rupture of the capsule by slight violence." As our patient was non compos mentis, self-inflicted injury cannot be ruled out altogether. It is also conceivable that disorderly movements on her part may have caused the rupture of her very much enlarged and mobile spleen, and at the same time initiated the torsion which in its turn arrested the hæmorrhage by occluding the vessels in the pedicle. It seems however more reasonable to suppose that the rupture was spontaneous and that, as not infrequently occurs in twisted ovarian cysts, the torsion was at first sufficient to occlude the thinner-walled splenic vein but not the splenic artery, which continued for some time to irrigate the organ, with resultant acute congestion and finally rupture.

[1] Ann. of Surg., 1901, xxxiii., 513.

DEATH FOLLOWING PERFORATION OF STERCORACEOUS ULCER

By J. J. O'Reilly, M.B. Belf., D.P.M.

DEPUTY MEDICAL SUPERINTENDENT, WINSON GREEN MENTAL HOSPITAL, BIRMINGHAM

The patient, a man aged 49, had been admitted to the City of Birmingham Mental Hospital, Winson Green, in 1931. Apart from a large right scrotal hernia and evidence of fatty heart disease, he had enjoyed comparatively good health, and he made no complaint of physical illness until April 29th, 1935.

On that day he complained of vague pain in the upper abdomen. Physical examination revealed slight diffuse tenderness over this area but no other signs. He was unable to retain any food and vomited even after sips of water and milk. His urinary output averaged 16 oz. in the 24 hours but the urine contained no abnormal constituents. His temperature remained subnormal throughout the illness, but his pulse-rate became progressively more rapid and feeble—from 84 at the onset of illness to 114 at the time of death. Two days after the onset of his illness his abdomen became much distended and on the suggestion of the consultant surgeon to the hospital, who considered the condition to be one of paralytic ileus, he was given pituitrin followed by turpentine enemata but without effect.

He died on May 3rd and post-mortem examination showed free gas in peritoneal cavity with a small quantity of semi-solid fæces lying in the neighbourhood of the lower border of the omentum. The large intestine was enormously dilated and filled with fæcal masses from the cæcum as far as the middle of the transverse colon. At the latter point there were three small perforations in the bowel wall. On the inner aspect of the bowel at this point there was a stercoral ulcer about 4 in. long lying in the long axis of the intestine.

It is of interest to note that the ulcerated condition, which must have been present for some considerable time, gave rise to no symptoms until within a week of death, and even then there were no signs indicative of the grave condition underlying the illness.

I am indebted to the medical superintendent, Dr. C. W. Forsyth, for permission to publish the details of this case.

Acton Hospital.—The first stone of the extension to this institution has been laid by the Mayor of Acton. The new building, which is to cost over £18,000, will include a men's ward and an enlargement of the out-patients' department.

MEDICAL SOCIETIES

ROYAL SOCIETY OF MEDICINE

SECTIONS OF EPIDEMIOLOGY AND TROPICAL DISEASES

AT a joint meeting of these sections held on Nov. 16th the chair was taken by Surg.-Captain SHELDON DUDLEY, president of the section of epidemiology, and a discussion on the

Malaria Epidemic in Ceylon

was opened by Sir WELDON DALRYMPLE-CHAMPNEYS. He began with a warm tribute to the work of his co-author, Dr. R. Briercliffe, director of medical services in Ceylon, who was unable to be present owing to a recrudescence of the outbreak. Epidemic malaria, he continued, had received little attention in the island until last year, for attention had been concentrated on the endemic form. Ceylon was shaped rather like a sheep's skull standing on its occiput. The south-west quadrant was the "wet" zone and was normally free from endemic malaria, but had been particularly affected by the 1934–35 epidemic. This was the richest, healthiest, and most populous part of the island, and received both south-west and north-east monsoons. The remaining three-quarters received rain mostly in the early autumn and was relatively dry. In 1934 from April onwards the south-west monsoon had partly failed, and the unprecedented drought had provided ideal breeding-places for the mosquito. It was a remarkable fact that the *Anopheles culicifacies* was the only species proved to be a malaria-carrier in Ceylon. In the upper and middle reaches of the rivers the flow had been reduced to a mere trickle, allowing the formation of many rocky and sandy pools. *A. culicifacies* chose just such clear unshaded pools for its eggs; shallow wells, pools in quarries and brickpits were subsidiary breeding-places. Its natural home was in the dry zone, and it was not found much in the wet zone until the abnormal drought produced dry zone-like conditions in the wet zone. The adult male was not easy to find, but it had been collected in unprecedented numbers during the epidemic period. There was no lack of gametocyte carriers, since in any year an average of 400,000 persons sought treatment at government centres.

The epidemic had broken out in four river basins on the west of the watershed and one on the east. The villages first and worst affected were on the banks of the rivers and the epidemic involved nearly a quarter of the island's area and nearly half its people: an area of 5800 square miles with a population of 3,100,000. Provincial surgeons had been warned to expect malaria, but the sudden overwhelming outbreak had been unanticipated and unprecedented. The first characteristic was the explosive feature; epidemics usually spread gradually. The chart of weekly attendances at the dispensaries showed a sharp rise, and peak at Dec. 22nd (62,000 attendances) with a more gradual fall. From the end of January numbers declined until a secondary wave appeared in April. It was estimated that a million and a half people contracted malaria between October, 1934, and April, 1935, and over 95,000 died. There was an excess of deaths (over 37,000) in the non-epidemic area also. The secondary wave had not been unexpected and it had affected all the five river valleys. The great epidemic had differed from others in starting in October instead of April. The failure of the south-west monsoon had been followed by a weak north-east monsoon. During the secondary wave many people and villages hitherto unaffected had fallen victims, but the most interesting extension had been upwards. Before April, malaria above 2000 feet had been uncommon, and above 2500 very, very rare; during this wave cases had occurred at 3500 feet, *A. culicifacies* being found there both in larval and adult form. The cases had been less severe and mortality lower in this wave, everywhere except in the Kandy district. Since June there had been steady improvement. The deaths had been down to the expected figure in most districts by September.

Antilarval measures had been started in January, 1935, and consisted of canalisation and oiling of breeding-places. Seven thousand miles of water-course, much of it through thick jungle, would have had to be covered if the whole range of breeding-places had been dealt with; an average worker could only cover a mile and a half a day. Emergency regulations had been issued in February. Elephants had been useful for clearing obstructions. Most cases were of the simple febrile type, responding readily to treatment. Relapses had been frequent because patients had discontinued treatment as soon as symptoms disappeared. There had been only five cases of blackwater fever. Deaths had mostly been due to dysentery and pneumonia. Post-malarial œdema had been regarded as a nutritional phenomenon, and feeding had been arranged for children in schools. Gangrene of the extremities had been seen occasionally. The most important antimalarial measure had been treatment of patients by quinine grs. 7½ thrice daily in solution. This was regarded as safe in unqualified hands, but Plasmoquine and Atebrin were used only in hospitals. Treatment centres had been opened in all badly affected villages. A total of 690 hospitals and 38 temporary hospitals had been opened in addition to the 80 central dispensaries, and 136 estate dispensaries had been supplied with quinine by the government. Over 33,000 lb. of quinine had been served out, and there had never been any shortage. No patient had had to go more than a mile and a half for treatment. There had been in-patient accommodation for 5000 cases, congestion being most acute in February.

Dr. V. B. WIGGLESWORTH said that many factors were at work in the genesis of a malaria epidemic. The appropriate mosquito was, however, a sine qua non. *A. culicifacies* occurred throughout the whole island. In the tea gardens of Assam it was uncommon during the monsoon, which continually flushed the rivers. In the dry season, on the other hand, it was found in myriads in the clear water pools; but because this was the dry season there was no infection. Similar conditions occurred in the hills of Southern India, and other species carried malaria in these parts. In the Punjab *A. culicifacies* found suitable breeding-places every year, and the neighbouring villages were centres of endemic malaria. They had much in common with the endemic areas of Ceylon. In years of excessive rainfall wide tracts of the Punjab became infested, and if the people had lost their immunity great epidemics resulted. The most striking difference was that breeding was favoured by excessive rainfall in the Punjab and by excessive drought in Ceylon and Madras. Given

good organisation, the large towns ought to be able to protect themselves, but antimosquito measures were least hopeful in rural areas where *A. culicifacies* was the carrier. In Malaya good agriculture needed clean drains, and this eliminated the two most dangerous mosquito species. Along these lines lay the best hope for the rural area: the modification of agricultural practice in such a way as to eliminate the mosquito. Unfortunately the abundance of *A. culicifacies* in Ceylon bore little relation to agriculture. The pools were a natural phenomenon and larvæ were continually being carried down stream. Nothing in existing experience in the world could give confidence in antimalarial measures for such an area as that involved in the Ceylon epidemic. A great deal more knowledge about the mosquito and its ways was needed: the criteria on which it selected its breeding-places and its choice between man and animals; the extent to which females remained in houses, and such matters. The best hope lay in an intimate study of the bionomics of *A. culicifacies*.

Dr. P. H. MANSON-BAHR said that during the years 1912–13, when he had been in Ceylon, malaria had been the scourge of the low country: the humid, hot, agricultural western and southern districts, and the hot, dry jungles of the north and east. At that time there had been no evidence of primary infections above 2200 feet, although history recorded epidemics above that level in Kandy as well as enormous ravages in the north, central and eastern provinces. The great cities of Anurhadhapura and Polonurrua, seats of the Sinhalese kings, were thought to have been abandoned because of malaria. Dr. Manson-Bahr had studied representative series of blood films from all over the island and concluded that the quartan parasite predominated (64 per cent.) and benign tertian next (19 per cent.), the most infrequent being the subtertian (17 per cent.). In those days tanks and ricefields had not been regarded as the main breeding-centres; the mosquito had been found much more abundantly in irrigation streams and the locomotive water-supply troughs beside the railway.

Colonel C. A. GILL added his tribute to Dr. Briercliffe and the Ceylon medical department and emphasised the salient features of the scheme adopted. As soon as the explosion had occurred steps had immediately been taken to mobilise the whole medical resources of Ceylon. Every practitioner, dispenser, sanitary inspector, and student had been enlisted to deal with the emergency. The public health department personnel of all kinds was at once switched over to help the medical department. This brought out the importance of having one head of both medical and public health departments. The next remarkable thing was the sudden expansion of hospital facilities by erecting new temporary buildings and by adapting schools. Branch dispensaries had been turned into central dispensaries, and beyond them had been treatment centres always open, and sub-treatment centres occasionally open. All serious cases had been drafted at once to properly equipped hospitals. Free kitchens had been opened at the dispensaries because the people were suffering from famine as well as malaria, and milk products had been freely available for undernourished children. The sanitary inspectors had been utilised very largely as intelligence officers and quinine distributors in the villages. Weekly reports had been received from every centre, and departmental conferences had been held whenever necessary. The epidemic had attracted a remarkable amount of public attention and some most unjustifiable criticism had been published. It was the first great malaria epidemic of modern times in the tropics, only paralleled by the Mauritius outbreak of 1867. Previous epidemics had been associated with excessive rainfall and had had only one wave of mortality. The Ceylon epidemic had therefore presented some extremely interesting epidemiological features.

Prof. W. SCHULEMANN said that in the emergency well-tried routine methods had naturally been used, and there had been no time to try new methods and make detailed observations. He discussed the intravenous use of quinine and atebrin. He agreed with the use of atebrin only in hospitals in Ceylon, but thought that this drug would prove to have many advantages owing to its better and more rapid absorption and action. He was sorry that it had rather been pushed into the background. It destroyed the gametocytes to such an extent that they were no longer able to infect mosquitoes, and reduced the relapse rate.

Colonel S. P. JAMES discussed the interaction of the various ætiological agents, and especially the rather puzzling subject of the influence of a non-immune population on the extent of the epidemic. Before the change of climatic conditions the population at risk had had no immunity to malaria. Laboratory work had shown that in non-immune patients the gametocytes occurred in the blood in much greater numbers and so an anopheles got its stomach absolutely crammed with oöcysts after a single feed. After feeding on an immune patient there might be two or three or at most ten oöcysts in the stomach. The mosquito which had taken several hundred oöcysts into its stomach would contain enough oöcytes to infect thirty or forty people, and remained infective for three or four months. The mosquito with only three or four oöcysts in its stomach lost all its oöcytes in biting one person and was infective for only two or three days.

MEDICAL OFFICERS OF SCHOOLS ASSOCIATION

A MEETING of this association held in London on Nov. 15th, with Dr. G. E. FRIEND (Christ's Hospital) in the chair, was devoted to

Problems of the Medical Officer in Private Preparatory Schools

Mr. E. WILSON HALL (Eastbourne) said he would approach the subject as a general practitioner, since he and his partner were looked upon as school doctors to 15 private schools. At some of these the doctor chosen by the headmaster or the headmistress was the only one allowed in the school, whereas in others he had known as many as four doctors attending pupils even during the same epidemic. In such circumstances a friendly relationship with colleagues and a strict ethical code were essential. He asked that he might be notified of any infectious disease which started in another doctor's patient, and that all question of infectivity and disinfection should be left to his decision. He welcomed the access of pupils' doctors to his schools, because it allowed of continuation of treatment and general care. But where the child came from outside the town and had no local general practitioner, it was unwise, and not exactly courteous, to ignore the school medical officer and write privately to another practitioner in the town asking his services. A recent case in point

was one in which a child, aged 14½, whom the speaker had looked after for eighteen months, was taken by the parents to a specialist because of an excess of body-weight. Her periods were scanty, and exercise made her short of breath—a common state of affairs, which usually rectified itself in a year or so. That girl was returned to school with instructions to a doctor in the town, who had never seen her, to give her thyroid, let her play no games, and diet her. Mr. Hall also had a word of condemnation of the custom, all too prevalent, of matrons serving out patent medicines sent back with the children by their parents. Most of the children were quite healthy, and this taking of vitamin-containing and other concentrated medicines could not be good for them; nor was the emphasis that was placed on their health. In private schools the doctor had to tread very warily, for he did not want to risk the child's removal from the school. In one or two essentials, however, he must look after the majority and advise the school authority to lose one or more pupils if necessary. In such diseases as scarlet fever, scabies, impetigo, and ringworm of body or scalp he usually allowed a longer period to elapse before permitting return to school than did most of his colleagues; the responsibility for other people's children was a very heavy one. Many parents went abroad leaving their children in charge of relatives or (as he considered preferable) the school authorities with full responsibility. If parents were really satisfied with the school and had met the medical officer, much loss of time could be avoided by dispensing with their permission before operating on appendicitis, otitis media, or similarly urgent conditions.

Certain rules the speaker found useful in dealing with the school matron; for example, any child with a rash was isolated, and no aperient was given in a case of abdominal pain, until after a medical visit. There must be no failure to call the medical officer wherever there was doubt or anxiety. In several of his schools Mr. Hall had instituted examination of each child at the beginning and end of each term, being informed by the matron of any loss or gain in weight. Regular weighing was very important, and provided a ready answer to parental criticism of the school food. He had been surprised at the number of requests received from parents that their children should not be allowed to play certain specified games. In private schools all the games were very well regulated, and even slight over-fatigue was readily noticed. His only criticism on this head was that the sports curriculum was rather too full, it did not allow enough leisure. He greatly favoured all team games; but running must be kept well within the fatigue limit in the developing child, and the preparatory schools he attended no longer held half-mile races. Sea-swimming was very valuable, but the responsibility of taking a crowd of children into the open sea was usually held to be too great, and most of the schools went to the sea-water baths. The swimming season, almost entirely from the baths, produced yearly many cases of otitis media. Though a pre-existing nasal infection was often the cause, and children with any such infection should be kept from bathing, he thought it unwise to encourage high diving, or frequent diving-in and coming out. He had prevented many a middle-ear infection by the use of 20 per cent. Argyrol drops up each nostril thrice daily. He was decidedly in favour of inoculation against the common cold and influenza, and had carried it out in several schools for some years. During an attack he again used the argyrol drops.

The CHAIRMAN said his experience was that parents nowadays were more apt to complain than they were a few years ago. But once they had been to the school and had an interview with the housemaster and the doctor, complaints largely ceased. The number of patent medicines brought back by boys to school almost constituted a public danger.

The Rev. W. R. MILLS, as headmaster of a large preparatory school, said he could not understand why the modern parent seemed to have so little faith in medicine except when administered by the home doctor. The school doctor had to be a person of extraordinary persuasiveness and strength of personality. It was always a regret to him to see disloyalty on the part of the home doctor to the school medical officer, and to an outsider it seemed a case in which the medical etiquette might beneficially be stiffened up.

Dr. G. H. BICKMORE spoke as a headmaster with a medical training, and said that in his school a health and hygiene committee had been set up to make recommendations concerning all health matters. That body considered that the danger of setting up middle-ear disease in bathing was greater from jumping-in than from ordinary diving. In some schools boys under eight were allowed to participate in cross-country running of half a mile. Wolf-cub sports, also, were often too exhausting for the younger boys. Many medical authorities considered that 100 yards should be the limit race distance for boys under eleven; some said 60 yards, and with the latter he agreed. He was not impressed with the value of inoculation against colds; he set more store by hygienic conduct and the disinfection of clothes.

Dr. GRAHAM FORBES agreed that jumping into the water was liable to drive infected mucus into the Eustachian tube. He did not think cases of otitis media occurred often enough in users of swimming baths to justify the disease being attributed to the swimming. As to running, he agreed that the boy of eight years should not be required to do more than 100 yards, but the born runner might suffer no harm from running longer distances.

Dr. W. ATTLEE (Eton College) said there was always an element of suspicion on the part of the parents as to the medical arrangements of the school. That was due to the two reasons which Mr. Hall had mentioned: (1) that often the doctor never saw the parents at all, and so was acting without any knowledge of them; and (2) that the school doctor could not treat children in the same way as they were treated in their own homes; at home minor risks could be taken which could not be taken at schools. Matrons and doctors at schools were always buffers between the children and their homes, and the interests of the boy were often at variance with those of the school and of the school doctor. If masters would realise, as Mr. Mills did, the difficulty of doctoring boys in school, they would encourage meetings between doctors and parents, and then, he felt, unpleasantnesses would vanish. With regard to athletics, he thought a boy under twenty was unlikely to damage himself by over-exertion; he had not the will power to drive himself to that extent. It was a different matter if there had recently been an exhausting illness.

Mr. A. E. LYNAM said he was himself especially keen on prevention, and would welcome advice from the Association on this head. When a child was likely to need an operation he thought the parents ought always to be consulted. The matron was

often given too much power, and she needed to be looked after. The headmaster should ask the advice of the doctor on medical matters, and the matron should carry out instructions.

Dr. R. E. SMITH (Rugby School) spoke of the steadily decreasing death-rates following on the more routine performance of necessary operations—e.g., for acute appendicitis. It was now the rarest occurrence for a boy operated upon for appendicitis to die. As to acute mastoid disease, this tested judgment more than any other condition met with in school work. He had had only one case of it at Rugby in the last five years. Many tender mastoids did not need opening, and mere earache without bulging and a definite rise of temperature did not call for operation. Prevention was largely a matter of efficient ventilation, and many preparatory schools were altered private houses. His view was that the sooner the population of the schools had the childhood infectious diseases the better for them, as they were in a condition to stand them better when young, and acquired a gradual immunity which lessened the total incidence of the serious disease.

Dr. J. LAMBERT (Wellington College) hoped it was realised that school doctors made determined efforts to get at the root foundations of diseases and the methods of their spread. Dormitories alone could not be blamed; boys mixed at games, in the library, and especially in the school chapel, and they did not take kindly to advice on personal hygiene. The school had to be regarded as a closed community. When boys with measles and influenza were warned of the danger of blowing their noses too hard, or of coughing vigorously, and were put on to inhalations of menthol or eucalytus, the ear complications at Wellington fell much below what was regarded as the average in other schools; he was surprised if he saw more than one mastoid case in two years. He did not practise early drum puncture for ear trouble; ensuring drainage would often result in quick subsidence. Much depended on the anatomical conformation of the particular ear.

Dr. J. A. H. BRINCKER said that in discussions on ear trouble following swimming it was assumed that the ears were normal, but many children had conditions that predisposed to otitis. In the absence of statistics no pronouncement on this danger was reliable. The type of school doctor which the Association was trying to develop was the one who would be of the greatest use to both pupil and headmaster. In past times the tendency had been too much in the direction of allowing the matron to decide when to send for the doctor. He reminded Mr. Lynam that the prevention of disease was a very difficult and complicated matter, and that the introduction of fresh individuals into the particular community might perpetuate an epidemic, however thorough were the measures taken.

NORTH-WESTERN TUBERCULOSIS ASSOCIATION

IN the course of a presidential address to this association in Manchester on Oct. 31st, Dr. PETER W. EDWARDS dealt with certain points he had found of definite value in the

Treatment of Adults Suffering from Pulmonary Tuberculosis

The days of super-alimentation had, he said, gone in the sanatoriums; but mothers, nurses, and some doctors still thought it necessary to over burden the impoverished stomach and if over feeding at recognised meal-times was impossible there was a sequence of snacks. Patients arriving at a sanatorium were a sorry demonstration of the result of this routine. Three ample meals of a good all-round diet containing fats and salads sufficed and the patient's stomach wanted rest before, after, and between meals, particularly before. In winter a teaspoonful of cod-liver oil once a day was probably beneficial.

Much had been written about air, and unfortunate patients who should be in bed were encouraged to seek air in parks and there, muffled up, they sought air for their lungs denying it to the body and wearying themselves withall. At the sanatorium protection from the elements was encouraged, for it was never clear why a patient with feeble lungs could tolerate fierce elemental conditions. But this protection did not mean coddling or muffling. The body surface and not merely the patient's face wanted the air. It was somewhat devitalising and dangerous to have patients snug in bed—Central African conditions of warm humidity and stillness under the bedclothes and his face in good British climate. The patients should get accustomed to the minimum of bedclothes and it was possible in all months even in England to get rid of blankets, especially for an air-bath. Such patients on absolute rest might keep up good body tone. Akin to this was exposure to sun and this was encouraged not because of faith in the value of the sun's rays but because of the value of moving air. Properly conducted, sun exposure did no harm. Because of this faith patients should be out early in the day in all seasons and protected around midday in summer. In the grading of patients their first move from bed-grade should be "up from 7 to 9 A.M."

GENERAL REST

Rest was the chief treatment and no rest was as good as that obtained on the bed. Patients should be encouraged when back at work to return home to rest on their beds and away from the home folk who encouraged talking: surely talking was mighty hard work for damaged lungs. For a few years after leaving the sanatorium patients should retire by 8 P.M. and get up at 7 A.M. This long night was a fine tonic. Bed rest should be accompanied by silence; this combination gave general and local rest. He encouraged the use of sand bags, up to 9 lb. in weight on each side of the chest. This, in addition to increasing rest, gave the patient something to do—a fact of importance. Results of this treatment at the sanatorium in acute cases were usually astonishing.

Frank pulmonary tuberculosis of any severity was rarely improved by tuberculin. Certain proliferative cases benefited and it was estimated that 2 per cent. of patients at the Cheshire Joint Sanatorium were always treated by tuberculin. Sanocrysin and certain other gold preparations had proved of value, particularly in exudative cases and in recent spreads in the opposite lung in artificial pneumothorax.

In laryngeal tuberculosis, strict voice rest, granted the lungs were healing, seemed to be all that was necessary. For extreme pain the injection of alcohol into the superior laryngeal gave temporary relief and the removal of the nerve gave permanent relief. It was possible to do this bilaterally if an interval of some six weeks was allowed. Feeding by means of a stomach-tube was better than slow starvation,

and this method should be adopted if there was any hope. The actual cautery had a very limited sphere and ultra-violet radiation locally probably none at all. The treatment was control of the lung, general exposure to air, and voice rest.

A development of note in treatment had been the colony. The spirit of enterprise and hope, the absence of the rush of ordinary industry coupled with the knowledge that medical observation was direct and regular produced good results. The colony—a place for prolonged treatment for some, for training for others, and possibly permanent settlement—had not been appreciated as yet by the community. The cottage scheme introduced by Dr. Dan Powell for the training of patients in domestic sciences was an excellent advance; it could and should be available in all sanatoriums for females.

LOCAL REST

Efficient strapping was rarely seen and yet strapping properly applied was comfortable and brought a large measure of rest. It was as valuable in one-sided disease as it was in pleurisy.

Artificial pneumothorax was the greatest development in treatment and the day had come when it should be applied more generally. It was to be preferred over all other methods; it was available for one-sided cases and for bilateral cases, consecutively or simultaneously. It was poor practice to carry out artificial pneumothorax treatment without X ray control and film control was only half control. The fluoroscopic screen was the method of choice. Watch the diaphragm, it might be depressed, and look for fluid. Watch the opposite lung as disease sometimes spread rapidly. Watch the mediastinum for flop and hernia as the film would not usually show this. See if the collapse was hindered by adhesions and, if the screen did not give details, take a film of the hemithorax in expiration when the character of the collapse was in doubt and an ordinary film where there was suspicion about the contralateral. All artificial pneumothorax cases needed an X ray photograph as a routine at least every twelve weeks.

Do not aim at compression in artificial pneumothorax, for healing occurred with relaxation and small peripheral collapse. Usually cavities disappeared without compression. The aim was a functional result—no sputum, no cavity, no pyrexia nor rapid pulse, and a good sedimentation-rate. The pretty picture of the lung compressed around the hilum was almost an anachronism and all cases should be selective—i.e., all cases should only have that degree of collapse compatible with a functional result.

Artificial pneumothorax cases frequently did badly because of bad mechanics. A cavity was seen and higher pressure prescribed, yet the mediastinum was already flopping and herniating. This herniation and flopping of mediastinum was a defect of the mediastinum, even as a femoral hernia was a defect of the femoral canal. It was seen with negative pressures and the treatment was twofold—phrenic evulsion or paraffin and gomenol. In all cases the mediastinum should be stiffened by giving 2 c.cm. of paraffin-gomenol; wait until the usual reaction was over and then in three days 5 c.cm. and in another few days 20 c.cm. It was not necessary to try to put the oil on the mediastinum; put it in the pleural cavity and it would stiffen up the mediastinum in a fortnight.

Keep an eye on the fluid and remove before it did damage. To assert that cases with fluid did as well as those without was inaccurate; the comparison was between cases where fluid was allowed to remain and where fluid was removed. Many fluids would be found to have tubercle bacilli, and tuberculous empyemata were not as dangerous as was commonly supposed. A rapid method of irrigating the pleural cavity was essential, a vacuum being rapidly produced by a water pump, and Carrel-Dakin solution, acriflavine, weak methylene-blue, or paraffin-gomenol used for disinfecting. Each had its value but Carrel-Dakin must not be used in the presence of a pneumopulmonary fistula.

On the continent there was a vogue for cauterising adhesions and much pretty work was done. It was assumed that on completion of an artificial pneumothorax recrudescence occurred around adhesions. Experience in this country did not confirm the assumption. Adhesions that interfered with functional results must be dealt with by severing, by phrenic evulsion, by a combination of both, or by thoracoplasty. Of the various thoracoscopes, the Gullbring instrument of the Uveright type was excellent. Cauterisation was tedious and not free from danger. The mere existence of adhesions was no justification for interference; but a cavity held out by adhesion three to six months after induction called for treatment. Phrenic evulsion should be the first line of attack and thereafter cauterise if necessary.

Phrenic evulsion as a sole procedure had only slight value. Unless artificial pneumothorax was performed for minimal disease—a procedure not to be recommended—phrenic evulsion should be performed to spread out refills and to control cavities. The operation could be performed through a small incision and did not disfigure. Some had given it up because of alleged dangers and surgeons did not like to have phrenic evulsion done before a possible thoracoplasty. But phrenic evulsion with artificial pneumothorax gave much better results than artificial pneumothorax alone.

Double artificial pneumothorax obviously would not give the results claimed in artificial pneumothorax for unilateral disease, but it had its victories.

Scalenectomy appeared to be futile; in 31 cases done at the Cheshire Joint Sanatorium in 1932 the results justified the abandoning of the operation. Apicolysis also had not been a success in their cases, though better selection and newer technique might give better results. Thoracoplasty—complete or partial—was an operation to be grateful for; but its sphere of usefulness with the cases seen at the Cheshire Joint Sanatorium had not been large.

HUNTERIAN SOCIETY

A PUBLIC debate organised by this society took place at Cutlers' Hall on Monday last on the motion:

That Birth Control is Unnecessary in Modern Life

The BISHOP OF ST. ALBANS said he was wholly opposed to birth prevention by artificial means. He had a very strong intuitive sense that the whole thing was repellant and, in the truest sense, unnatural. There was no argument in favour of regarding it as wrong; but in moral judgments the intuitive sense could not be ignored, especially when it was shared by a large number of people. Birth control was against the teaching of at least three great religions: Jewish, Christian, Mohammedan. It was unnatural because it set out to frustrate the biological ends of

Nature; moreover, the means were antisocial and antipatriotic. He was told that birth prevention was intended to meet the changed conditions of the world. What were those changed conditions? Were they slums? Then clear the slums. If poverty, why have poverty? It was a scandal to allow human beings to live under conditions which no breeder of thoroughbreds would tolerate for his animals. There was now much laxity in sex relationships, but to call this "changed conditions" was the worst form of defeatism; it was wrong to sit down under conditions which could be changed for the better. A good deal was said about hard cases in justification of birth prevention, and no one could have followed his profession for 39 years without meeting with hundreds of them. But what advice was to be given to a husband or a wife whose partner might be condemned to practical celibacy owing to the state of health of the marital mate? Would husband or wife be advised to go elsewhere for satisfaction? Ultimately, he was convinced, it would be imperative to go back to the only safe method, self-control. Why did a distinguished member of the medical profession move, in the House of Lords, for legislation restricting the sale and advertisement of contraceptives if, as was alleged, they were the gift of God and of science for the betterment of humanity? If there was danger the public should be told; but if there was no danger, why restrict the sale of contraceptives? Large families afforded the best kind of education; but if, on the other hand, one played with Nature, she had a nasty way of getting back on one in the end.

Dr. C. P. BLACKER asked whether those who opposed contraception expected people to practise abstinence? As a universal principle it was acknowledged that abstinence was impossible. Information had been obtained from 979 women as to their usual frequency of coitus: 2 per cent. indulged more than once a day, 7·6 per cent. once a day, 31·3 per cent. more than twice a week, and 40 per cent. once or twice a week. In the speaker's own practice, only six practised abstinence from coitus, out of several thousands. He believed that birth control was abused by many in this and other countries; yet it could at the same time be necessary. Civilisation had now passed from the phase of unplanned parenthood, and no one ought to try to induce women to have children if they did not want them.

Dr. HALLIDAY SUTHERLAND, commenting on statistics, said that women who consulted gynæcologists and psychiatrists were not normal, and this debate was concerned with the mass of the population. Obviously some form of control was necessary in life; it was the essential difference between man and the animals that the former could exert self-control. Was it implied that nobody could do without the sexual act, even for a limited period? Was it impossible for a married man to practise continence for 12 days in each month? After a child was born the mother should have no sexual intercourse for three months; was the husband to go elsewhere during that time? Apart from pregnancy, the act of coitus imparted to the woman valuable hormones. If the "safe period" was to be really safe it must be observed to the hour. The safest way of all was to maintain the practice of self-discipline. He would be a bold doctor who would ignore all this tampering with the natural course of Nature as an element in the too-high maternal death-rate.

Dr. E. R. T. CLARKSON insisted on the importance of thorough and conscientious study of this, or any subject, before essaying to give advice and leading. Many gave advice on this matter who had no acquaintance with the cognate sciences, yet it was one of really vital importance to the nation, and all nations. Religious, ethical, and moral considerations were involved as well as sociological.

Sir WALTER LANGDON-BROWN said the Bishop had not discussed whether birth control was necessary, but rather whether it was right. We were again under the shadow of war, which might spread, and an expressed purpose of that war was to find room for the increasing millions of people of a country where birth control was ranked on the side of banditry in the penal code. The Bishop's chief point was that he disliked the methods of birth control, but Sir Walter would prefer to rely on reason than on intuition. If it was asked what ends is it hoped to achieve by birth control, he would answer: life and health, so that a woman may space out her family according to her wishes and her means, so ensuring that the children will be brought up in good conditions. In early days it was looked upon as simply the ordinary course that a woman who gave birth to eight or nine children lost two or three early in life; but nowadays to lose a child was regarded as a calamity. Sir Walter gave instances of wives of labourers out of work with five or more children to keep, and urged that birth control for such was a pressing necessity. The object of marriage was mutual consolation and the enrichment of life; there was a great deal in it besides reproduction: out of instinct it was possible to build up something possessing high spiritual value. Because birth control was abused, however, it was the desire of the medical profession that it should not go uncontrolled. He agreed that abstinence was an impossible doctrine; celibacy was admittedly possible, but married celibacy was worst of all.

The Rev. Father MAGUIRE said that the Ten Commandments had raised woman to her present position, but the preaching and carrying out of birth control would degrade her lower than in pagan times.—Mr. WILLIAM IBBOTSON thought one should be no more ashamed to confess being hungry for love than being hungry for food. The former resulted in that priceless sovereignty the baby. Health was essential to perfect happiness, and health could be maintained only by adherence to primitive laws. We should not sacrifice our idealism on the altar of convenience.—Dr. KENNETH DICKSON said that most of the opponents of birth control based their position on religious rather than on scientific bases.—Dr. F. J. BENJAMIN also held that the ethical objections to birth control did not stand logical analysis. Birth control was certainly necessary among the poor; its use did not mean that the people concerned were licentious.

Other speakers followed, and the openers replied.

POST-GRADUATE COURSES IN BERLIN.—International courses are to be held in Berlin on the following subjects: internal medicine (Feb. 24th to March 4th), syphilis of the internal organs (March 5th to 7th), tuberculosis (March 16th to 21st), obstetrics and gynæcology (March 23rd to 28th), radiology (April 9th to 14th), abdominal surgery (April 20th to 25th), homœopathy (April 20th to May 16th). Courses in all the special departments including practical work will also be held. Particulars of all these courses may be had from the information bureau of the Kaiserin Friedrich-Haus, Robert-Koch-Platz 7, Berlin N.W.7.

REVIEWS AND NOTICES OF BOOKS

The Biology of the Individual

Edited by J. RAMSEY HUNT, M.D., THOMAS K. DAVIS, M.D., and ANGUS M. FRANTZ, M.D. Baltimore: The Williams and Wilkins Company. Pp. 323. 27*s*.

THIS is the fourteenth of the series of yearly publications by the Association for Research in Nervous and Mental Disease. It opens with a historical paper by Dr. Smith Ely Jelliffe, learned in range, followed by Dr. Charles B. Davenport's chapter on body-build and its inheritance, which is meagre but informative. The relation of morphological form to reflex action and behaviour is discussed on the basis of his own investigations on dogs by Dr. William T. James; a more useful paper is that of Mr. T. Wingate Todd on the progress of physical maturity and mental expansion in children. Prof. Arnold Gesell's contribution on the ontogenetic patterning of infant behaviour gives a very brief account of some of his brilliant work at the Clinic of Child Development at Yale. A lucid survey of the relation between constitution and internal medicine by Prof. Lewellys F. Barker is followed by a detailed account of endocrine aspects of constitution by Dr. Walter Timme. Biochemical aspects are reviewed by Dr. Max Goldzieher. Prof. Eugen Kahn gives a critical survey of the formulation by Kretchmer and others of the constitutional features of personality types. One of these, the eidetic, is dealt with at more length by Dr. Heinrich Klüver.

Prof. Macfie Campbell's balanced statement of the relation between personality and psychosis introduces the more psychiatric part of the volume. Special studies made in this field are reported by Dr. Karl M. Bowman from the Boston Psychopathic Hospital, and by Dr. R. G. Hoskins and Dr. E. Morton Jellinek from the Worcester State Hospital. Prof. Allport's presentation of the relation between individuals and their human environment is appropriately followed by Dr. William Healy's temperate consideration of delinquency as an individual problem. An airy, loosely written paper by Dr. Paul Schilder on personality in the light of psycho-analysis, a note on handwriting and the Rorschach test in relation to personality by Dr. Oskar Diethelm, and a report of investigations into sexual development by Dr. George W. Henry conclude the book. Reports of the discussions that followed each paper when it was read are included, but only in a few instances is a list of references to the literature of the various topics appended.

An Introduction to General Therapeutics

By H. K. FRY, D.S.O., B.Sc., M.D. Adel., B.Sc., D.P.H. Oxon., Lecturer in Materia Medica and Therapeutics in the University of Adelaide. London: Cassell and Co., Ltd. 1935. Pp. 223. 6*s*.

UNDER this title, borne by a very small book obviously written for junior students, one might expect a simple presentation of the principles of therapeutics, illustrated by common examples. In the preface, however, the author says that he aims at a concise survey of modern methods of treatment, dealing with the principles underlying their use, and their possibilities and limitations in practice. The book is consequently disappointing; for it attempts too much in too little space. Such principles as appear in it are set forth too baldly, and without adequate illustration. Long stretches of it are dry statements about the uses of drugs, and there is scarcely even room for mention of the evidence on which a statement is based. The field is not confined, of course, to drugs and chemical preparations, but ranges over endocrine treatment, immunology, dietetics, physiotherapy, psychotherapy, and climatology. The result is an agglomeration of facts, to be accepted as such on the author's authority; they may help to fill the storehouse of the inquisitive student's mind, but so set forth they do nothing towards stimulating his thought, or training his critical faculty. Teachers do not get the best out of their students in this way.

The Autonomic Nervous System

By JAMES C. WHITE, M.D., Assistant Professor and Tutor in Surgery, Harvard Medical School; Assistant Visiting Surgeon, Massachusetts General Hospital, Boston. London: Henry Kimpton. 1935. Pp. 386. 30*s*.

THIS is the most comprehensive review of the surgery of the autonomic system which has yet appeared in English. Since it has been written by a clinician of wide experience, who is endowed with a well-developed critical faculty, the book will be a great help to every practitioner who wants to know what surgery can achieve under certain stated circumstances. It is clear, for instance, that Dr. White's experience leads him to place little confidence in sympathectomy for asthma and epilepsy; and he does not hesitate to state, when referring to thromboangiitis obliterans, his own rather gloomy views in contrast with the more favourable opinions expressed by other surgeons.

Dr. White's work has been based upon the most recent discoveries of physiology, and has been controlled by the careful application of exact methods of clinical examination. It is therefore fitting that the first part of his book should be devoted to the anatomy and physiology of the autonomic system and to a description of the apparatus and methods employed for studying patients before and after operation. The reader will appreciate the care which has been taken to exclude unnecessary detail, and he will be struck by the extensive and ingenious use which is made of novocain to block autonomic nerve impulses. The second part is devoted to the consideration of the various conditions in which it is possible to modify the function of the affected organs by destruction of their nerve-supply, and the author has been careful to discriminate between the conditions which react favourably to operation and those for which sympathectomy has been performed with little justification and a correspondingly small degree of success. The importance in prognosis of the severity of various diseases under consideration has not, however, been sufficiently stressed, and the explanation offered for the unsatisfactory results in some cases of Raynaud's disease is unconvincing. The suggestion is that destruction of post-ganglionic fibres renders the denervated vessels supersensitive to circulating adrenaline; yet later on recurrent attacks of vasospasm are attributed to the excision of an inadequate number of ganglia.

The last section of the book deals with technique and gives a concise description of the various methods of surgical approach and of alcohol injection which are now employed for sympathetic denervation. The

accompanying drawings are all clear, with the exception of those illustrating the posterior approach to the cervico-thoracic ganglia, which seem to be upside down. The final chapter describes peripheral sympathectomy by crushing the mixed nerves in the lower extremity, a procedure, introduced by Dr. White and his colleague Dr. R. H. Smithwick, which constitutes a notable advance in the treatment of Buerger's disease. The value of the book is greatly enhanced by an extensive but well-selected bibliography.

Tumeurs de l'encéphale

By D. PAULIAN. Preface by Dr. CLOVIS VINCENT. Paris: Masson and Co. 1935. Pp. 216. Fr.30.

IT is difficult to discover in what way the study of brain tumours is advanced by this monograph. It is a collection of notes relating to 46 oddly assorted cases of glioma, meningioma, neuroma, secondary carcinoma and tuberculoma, all of which, with one exception, appear to have come to necropsy. The notes in general are too limited to be of guidance either to clinician or pathologist. When the variety of the material is considered it is perhaps hardly surprising that there is little attempt to discuss in a general way the experience gained. There can be little doubt that more is to be learnt of cerebral tumours from the careful description and discussion of a small group of cases selected from a large quantity of material than from uncritical reports of a far larger number of consecutive cases. Considerable emphasis is laid upon the importance of ventriculography in the diagnosis of intracranial tumours, and a chapter is devoted to the description and discussion of this procedure. The author lays himself open to a suspicion of insufficient experience in stating (p. 139) that tumours of the hypophyseal region are rare, and (p. 36) that the type of secondary carcinoma most frequently encountered in the brain is that derived from chorion carcinoma. There are many inaccuracies in the spelling, references, and the names and nationalities of authors. The poor quality of the many illustrations is probably to some extent attributable to the printing.

Diseases of the Nervous System

Sixth edition. By S. E. JELLIFFE, M.D., Ph.D., formerly Professor of Psychiatry, Fordham University, New York; and W. A. WHITE, M.D., Superintendent of St. Elizabeth's Hospital, Washington. London: H. K. Lewis and Co., Ltd. 1935. Pp. 1175. 42*s*.

THIS edition is arranged on the same general lines as its predecessors. About two-thirds of the book is devoted to organic diseases of the nervous system and the remaining third to the neuroses and psychoses, in which epilepsy is included. The authors state that they have undertaken to include as far as possible all important contributions of sufficient weight which have been made since the last edition. The book suffers severely from an attempt to cover too much ground, and a resulting lack of proportion. Nearly half the section concerned with organic diseases is devoted to methods of examination, vegetative and visceral neurology, and the endocrinopathies. The inclusion in these sections of blood syndromes, achondroplasia, myxœdema, cretinism, and Addison's disease occupies space which might have been used to better advantage, for a number of important neurological topics are inadequately treated. Compression of the spinal cord including spinal tumour receives four pages, less than the space allotted to diseases of the suprarenal bodies. Intracranial aneurysm is only briefly mentioned, and the clinical picture of subarachnoid hæmorrhage is not described. Subacute combined degeneration is not clearly differentiated from a motley group of "combined scleroses." In a book of more than 1100 pages the radiographic diagnosis of intracranial tumour receives only six words. Treatment is not described in sufficient detail, except the treatment of neurosyphilis. It is mainly in the realm of recent developments in neurology that the shortcomings of the book are to be found. Much of the older material attains a high standard. The historical background is valuable; the references and footnotes are well chosen; the illustrations, except for the absence of radiograms, are excellent; and the printing and format leave nothing to be desired. Both the student and the practitioner of neurology, however, have a right to expect that a new edition of an important text-book shall be thoroughly up to date.

John Bellers

Quaker, Economist, and Social Reformer. By A. RUTH FRY. London: Cassell and Co., Ltd. 1935. Pp. 174. 6*s*.

THE advances in public health made by Chadwick, Southwood Smith, and Simon during the first sixty years of the last century were so remarkable that they obscured for some time what was achieved by earlier workers in the same field, the value of whose work is now becoming more fully appreciated. Sir George Newman has shown what we owe to Haygarth, White, and other clinicians in the eighteenth century, who by their writings and practice did much to further the progress of preventive medicine; and in this book Miss Fry introduces us to an earlier pioneer. John Bellers was not a medical man but a successful cloth merchant, and health reform was only one of his many public activities. His first scheme was to set up a number of industrial communities for the education and employment of the poor, and the pamphlet in which he set it out won the commendation of Robert Owen, who reprinted it in 1818, and of Karl Marx, who described the author as "a veritable phenomenon in the history of political economy."

But Bellers has a special claim to our attention now. He studied the Bills of Mortality, from which he computed that 100,000 persons died annually "of curable diseases for want of timely advice and suitable medicines"; and he thought that since three-quarters of the population were too poor to procure either the State should provide what was necessary. He recommended the building of hospitals, the appointment of sufficient doctors for the domiciliary care of the sick poor, the encouragement of research, and special steps to secure the wide distribution amongst the medical profession of available knowledge of health and disease. He thought that the State should send out doctors to the East and West Indies in search of remedies, and that all ships' surgeons should be encouraged by suitable rewards "to make what useful discoveries they can in every country they come to." He attached importance to the keeping of clinical records, and thought that an autopsy should be made in the case of every patient dying in hospital. He aimed at a high standard of medical education in this country, "which may

prevent many from travelling to foreign hospitals to learn, when they shall be capable of doing it better at home." While he considered health problems from the point of view of cure rather than prevention, he was modern in his demand that the State should assume responsibility for promoting medical research and for providing adequate treatment.

Altogether Bellers was an interesting man, and Miss Fry has done well to tell us what is known of his life and to give sufficient extracts from his writings to establish her claim that he was a notable pioneer in social reform.

Introduction à la chirurgie thoracique

By E. E. LAUWERS. Paris: Masson et Cie. 1935. Pp. 112. Fr.20.

THE object of this book is to provide a concise account of the present position of thoracic surgery suitable for the student or graduate without extensive previous knowledge of the subject. Artificial pneumothorax is advocated if one month's rest fails to bring down the temperature and is also considered essential if relapse occurs after one period of sanatorium treatment. Adhesions should not be divided during the first six months of pneumothorax treatment. Thick-walled cavities when dry require no treatment; when sputum is present they always require closure by surgical methods, artificial pneumothorax being useless either because collapse is prevented by massive adhesions or because the fibrous shell of the cavity resists pressure. To be readable a book of this kind can hardly avoid being dogmatic and the author must be excused when, in expressing a general truth, he overlooks numerous exceptions. The absence of any illustrations is regrettable.

Nouveau traité de médecine

Fascicule XX. Pathologie du Système Nerveux. Published under the direction of Profs. G. H. ROGER, F. WIDAL, and P. J. TEISSIER. Paris: Masson and Co. 1935. Pp. 984. Fr.130.

THIS volume, a member of a well-known and valued series, is devoted to the pathological anatomy of the brain stem, cranial nerves, meninges, and spinal cord, other parts of the nervous system having been dealt with in the two preceding volumes. Famous French neurologists are amongst the contributors: thus G. Guillain and Th. Alajouanine provide sections on the mesencephalon, pons, and medulla; J. Froment on the cranial nerves; while J. A. Sicard and J. Haguenau, A. Léri, J. Thiers, J. A. Lièvre, O. Crouzon, and Ch. Chatelin are responsible for other sections. The title of the work is somewhat misleading. It is not primarily a treatise on pathological histology; the contributors are rather less concerned with the actual morbid processes at work than with the effects produced upon the patient. This is a book essentially of syndromes, and the anatomy of the changes that are correlated with such syndromes is described with a profusion of illustrations that are as much clinical as anatomical. This is particularly true of the first half of the text which is concerned with the brain stem. This section in particular will appeal to the clinical neurologist who is engaged in the analysis of lesions in this situation.

For the pathologist the parts dealing with the meninges and spinal cord will prove more attractive, including, as they do, descriptions of conditions that are little known and little understood, such as hæmatomyelia and the various degenerations of the spinal cord. The omission of any reference to recent work on the ætiology of pernicious anæmia or to the possible rôle of vitamin deficiency in relation to these spinal cord degenerations is, however, disappointing. The description (p. 411) of Tay-Sachs's disease as a degenerative condition of the ganglion cells of unknown origin ignores the widely accepted view that this disease is a metabolic disturbance closely allied to Niemann-Pick's disease, in which there is a storage of lipoids in the ganglion and glial cells of the central nervous system, as well as in other tissues. Defects of this order weigh lightly against the value of the work as a book of reference correlating anatomy with clinical neurology.

Handbook of Physiology

Thirty-fourth edition. By the late W. D. HALLIBURTON, M.D., F.R.C.P., F.R.S., formerly Professor of Physiology, University of London, King's College; and R. J. S. MCDOWALL, M.B., D.Sc., F.R.C.P. Edin., Professor of Physiology, University of London, King's College. London: John Murray. 1935. Pp. 971. 18s.

THE general features of this book are unchanged in this edition which is not, however, simply a reprint of the previous one, for verbal alterations have been made throughout in the interests of clarity, a few figures have been changed, several paragraphs have been abbreviated to allow the insertion of new matter, and two or three sections have been rewritten. Although the pagination is the same as before, it may fairly be said that the book has been brought up to date. The preface to this volume is liable to mislead those unfamiliar with the recent development of work, since it is almost identical with that of the thirty-third edition, the same reference being made to new features and to the almost complete rewriting of the book in the "last three editions." The index is excellent, being much more exhaustive than is usually found in a volume of this size. The book will continue to appeal to those who require a short, readable, fairly complete but not too advanced account of the subject as a preliminary to the study of medicine.

Tuberculosis of the Lymphatic System

By RICHARD H. MILLER, M.D., F.A.C.S., Assistant Professor of Surgery, Harvard Medical School; Associate Surgeon, Massachusetts General Hospital. New York: The Macmillan Company; London: Macmillan and Co. Pp. 248. 17s.

Dr. Miller gives in this monograph a straightforward account of tuberculosis as it affects the lymphatic glands. In America, as in this country, tuberculosis in this site is becoming much less common; but this cannot be attributed to any great advance in treatment, which indeed has remained almost stationary during the last thirty years. The absence of real progress in therapeutics is revealed in most of the chapters of this book. The remarks on the unsatisfactory results of tuberculin and the uncertainty of cure by the operative removal of cervical glands are in accordance with the experience of most surgeons, but it is depressing to learn that in the author's experience the same uncertainty and unreliability applies to the use of X rays. More information might have been given in the chapter on abdominal tuberculosis, but in general the book impresses the reader with the sanity of its outlook.

In Pruritus Ani, Anal Fissure, Pruritus Vulvæ, etc.

"Proctocaine" is a lasting, non-toxic, local anæsthetic, for use in irritating or painful conditions of the skin and subcutaneous tissues. It is an improved form of A.B.A. "Proctocaine" is a combination of oil-soluble anæsthetics of low toxicity. These are combined so as to produce *immediate local anæsthesia* which is maintained by the slow, uniform absorption of its oily vehicle, and action of its oil-soluble ingredients.

The advantages of "Proctocaine" over other solutions have been found[1] to be as follows:

1. Its effect is almost certain.
2. It produces anæsthesia or hypo-anæsthesia for periods varying from 7 to 28 days or longer.
3. The relaxation which it produces in the anal musculature is much greater and more prolonged.
4. It is comparatively non-toxic, injection of 20 to 30 c.cm. producing no general effect.
5. Even large quantities of it at one sitting have not been found to produce any local reaction if injected properly.
6. Its injection is painless if made slowly.
7. In no case did it produce severe after-pain.

[1] *British Medical Journal*, 1935, November 16th, p. 938.

In ampoules: 2 c.cm., boxes of 6, 4/6 and 12, 8/6
5 c.cm., „ „ 6, 8/6
10 c.cm., „ „ 3, 8/6

PROCTOCAINE
Injection Solution
LOCAL ANÆSTHETIC—ANALGESIC

Telephone: 3201 Bishopsgate (12 lines) **ALLEN & HANBURYS Ltd., LONDON, E.2** Telegrams: "Greenburys Beth London"

The most palatable form of Halibut-Liver Oil

One teaspoonful of "Haliborange" is equivalent to one teaspoonful of Cod-Liver Oil in vitamins A and D and to about two teaspoonfuls of Orange Juice in vitamin C.

Indications:

In all conditions arising from a deficiency of Vitamins A, C, and D, in the diet.

In 5, 10, and 40 oz. bottles.

"Haliborange"
HALIBUT-LIVER OIL, VIOSTEROL, ORANGE JUICE

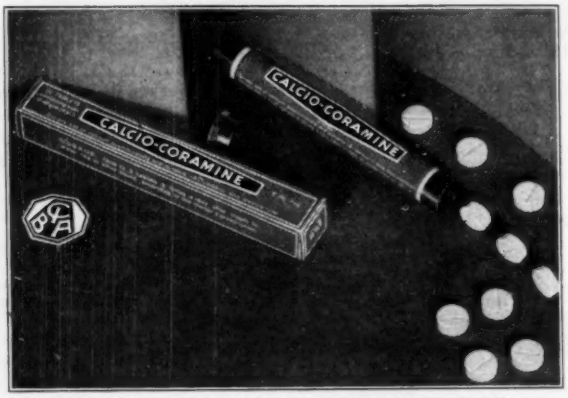
Descriptive literature will be sent on request.

ALLEN & HANBURYS LTD., LONDON, E.2

Telephone: Bishopsgate 3201 (12 lines) Telegrams: "Greenburys Beth London"

See also p. 35.

CALCIO-CORAMINE



PACKAGES: Tubes containing 20 tablets of 0·40 grm. (6 gr.)

DOSAGE: One to two tablets three times a day in water, tea or other liquid, preferably after meals. For children reduce the dose according to age. The tablets are indented, so that they can readily be divided into two equal parts.

Possesses a **reinforced expectorant action** for internal administration in the treatment of

bronchitis
catarrh
bronchopneumonia
emphysema
pulmonary œdema
pulmonary abscess

bronchial asthma, cardiac neuroses, angina pectoris, endocarditis, myocarditis, etc.

Calcio-Coramine is a **potent cardiac & respiratory stimulant** in cases of physical fatigue and threatening collapse.

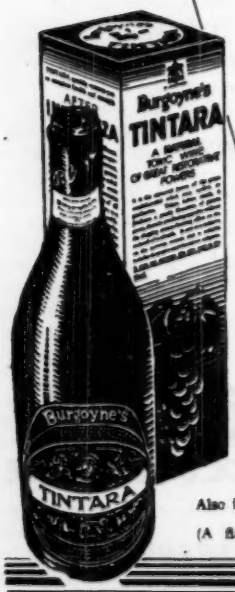
CIBA LIMITED

40 Southwark Street, S.E.1

Telephone: Hop 1041 Telegrams: Cibadrugs Boroh London

THE TONIC PROPERTIES OF FERRUGINOUS BURGUNDY.

Wine prepared from grapes grown on ferruginous soil in a warm climate has long been recognised as a natural tonic of considerable value after debilitating illness, in cases of anæmia, after influenza—in short, where bodily strength needs rebuilding. It is pleasant to the palate—its effects are immediate and lasting.



FOR over sixty years Burgoyne's Tintara has been highly recommended by the medical profession. It is a very full, natural burgundy from Australia. It is low in acids, *absolutely pure and unadulterated.* A sample will be sent free in the United Kingdom on receipt of professional card.

4/- per bottle
2/2 per half bottle
Also in flagons and half-flagons at 6/- and 3/-.
(A flagon equals a bottle and a half).

Burgoyne's
TINTARA
FERRUGINOUS

Quality approved and checked by the British Analytical Control.

P. B. BURGOYNE & CO. LTD.
BURGOYNE HOUSE, DOWGATE HILL, LONDON, E.C.4.

THE LANCET

LONDON: SATURDAY, NOVEMBER 23, 1935

TEACHING OF MEDICAL PSYCHOLOGY

FOR a long time, to all intents and purposes, the field of psychological medicine has been divided into two. The need for institutional care seemed to separate sharply the insane from the sane, the psychotic from the neurotic; and administrative and traditional usage caused a parallel cleavage in medical work: the "asylum doctor" or alienist cared for the lunatic, while the general physician treated—or disdained to treat—the sufferers from "nerves." Some of the latter patients passed into the hands of the neurologist when diseases of the nervous system became a differentiated specialty. The doctors in each group saw little of the illnesses complementary to those they were familiar with; their views about the whole subject were correspondingly partial, and were all the more tenaciously held because they were the outcome of intense but narrow experience. This state of affairs has changed since the war in that the neurologist has had to cede much of his territory to the psychotherapist. But the general line of division is still commonly drawn between those who work in mental hospitals and those whose contact with mental disorder is in the consulting-room, the out-patient department, or the wards of the general hospital. Each group shows misunderstanding of the other's position, tends to belittle its competence in the subject as a whole, and would be reluctant to entrust to it the teaching of psychological medicine.

This last is an immediate issue; for the teaching of psychological medicine as a whole is becoming more and more plainly a necessary part of medical education. To split it under the two heads—insanity and the psychotherapy of neuroses—would be justifiable only if there were no teachers with knowledge of the whole field, or, on the other hand, if one believed that disturbances in psychic life are due to a different order of causes, call for different principles of treatment, and exemplify quite different laws of normal and morbid function according to whether or not they affect conduct to the point of social and suicidal risk. Neither of these conditions prevails; fully equipped teachers are available, and psychological medicine is essentially a single subject. The dichotomous view of mental illness is no longer held by those who have had equal experience of both the "neuroses" and "psychoses." Psychiatry, as Prof. ADOLF MEYER has often pointed out,[1] is the "study and treatment of all abnormal conditions in which are involved man's behaviour and mentation"; hysteria and anxiety are as much included in it as melancholia and dementia præcox; and it will be taught best by those who have the widest experience. But although such teachers are available, there is still dispute about what they should teach. It is also questioned whether complete teaching should not be reserved for post-graduate students.

Dr. T. A. Ross's Morison lectures to the Royal College of Physicians of Edinburgh now published in full[2] form a helpful contribution to the problem. Dr. Ross is pre-eminent among that section of psychiatrists who are almost exclusively occupied in psychotherapy. He has had exceptional opportunities for judging the value of the psychological theories that may be applied to the treatment and understanding of neurotic illness, and though in these lectures he naturally refrains from dealing with the teaching of the forms and treatment of the grosser mental disorders, he puts forward cogently the very definite opinions he has come to hold about the teaching of medical psychology. With a plain vigour of statement corresponding to the outrightness of his views, he explains his reasons for having "thrown the Freudians and the semi-Freudians overboard as teachers of students," and his grounds of complaint against the doctors trained only in mental hospitals—to whom he restricts the term "psychiatrist." Those who would most dissent from his desire to sunder psychotherapy from other branches of psychological medicine would be the readiest to accept his very weighty plea for the teaching of the "great mass of psychological knowledge on which we are all agreed"; and, he adds, "by 'we all' I mean all intelligent people, not only psychologists." An elementary psychology, avoiding the dubieties and conjectures of the warring schools, is ready to hand and would be what in some schools it has already become—an invaluable part of medical training. Dr. Ross believes strongly that much of the treatment of the neuroses can and should be done by the general practitioner, and would have him learn about it from the physicians and surgeons in the wards, by way of history-taking and discussion of the patient's difficulties, rather than from a specialist. For a long time to come this can be only a pious hope. Dr. Ross perhaps under-estimates the special knowledge and technique which he has acquired and of which he offers in these lectures so simple a presentation. On such controversial matters, however, his experience and refreshing directness make his views very welcome at a time when the education of the medical student is being amplified on the psychological side, and when some would like to give it a very decided twist in this direction.

[1] See THE LANCET, 1934, i., 31.

[2] Ross, T. A.: The Teaching of the Neuroses to Medical Students, Edin. Med. Jour., 1935, xlii., 445.

TREATMENT OF CANCER OF THE LARYNX

OWING to the absence of efferent lymphatics from the interior of the larynx, intrinsic cancer, which is nearly always epithelioma originating on the vocal cord, remains for a long time a strictly local process, and as such yields to treatment a higher proportion of cures than does visceral cancer elsewhere in the body. A further reason for this favourable result is the possibility of early diagnosis; for the lesion, being on the surface, is easily visible by means of a mirror, and produces the obvious symptom of hoarseness at a very early stage. It cannot, therefore, be too often repeated that any patient who is hoarse for more than a few weeks must have the larynx inspected by a competent observer. Provided that the growth is still amenable to complete excision by laryngo-fissure, 70–80 per cent. of cures can be obtained. Prof. CHEVALIER JACKSON, who with his son Prof. CHEVALIER L. JACKSON contributes to a symposium on the present-day treatment of malignant tumours,[1] claims 82 per cent. of cures in these cases, and describes a valuable modification of technique. This modification is especially suitable for cases in which the anterior commissure is involved, and brings within range of removal by laryngo-fissure a number of lesions which have been considered suitable only for laryngectomy. It consists in dividing the thyroid cartilage in the middle line without penetrating the internal perichondrium, preferably by means of an electrically driven circular saw. The perichondrium is then elevated as far back as necessary, first on the side least affected, and the growth is excised in one piece with a wide surrounding area of normal tissue. The extent and situation of the excision has to be guided by previous careful study of the appearances, since the interior of the larynx is not visible at this stage of the operation.

The selection of cases for surgery has been modified of late years by a great improvement in the results obtained with radium and X rays, and at the same time assessment of the malignancy of these tumours has been made more exact by Broders's classification into four types, of which the more malignant, though less successfully treated by surgery, are more amenable to radiation. The choice of operation depends on three factors—the site of the growth, the extent of the lesion, and the degree of malignancy. Laryngo-fissure is advisable in early intrinsic cancer of small extent, limited to the vocal cord; but extension to the anterior commissure is not a contra-indication, more especially when Jackson's modified operation is used. The same, however, cannot be said of extension posteriorly; when the growth has reached the posterior commissure leakage down the party wall between the pharynx and the larynx is rapid, and even laryngectomy yields poor results. Again, when the growth has extended upwards to involve the aryepiglottic folds or the base of the epiglottis, it is to be regarded as extrinsic and suitable only for laryngectomy. In cases, then, which are strictly intrinsic, all four of Broders's types of malignancy are curable by laryngo-fissure, provided that the lesion is small. If it is large, and of type 3 or 4, a laryngectomy ought to be performed. When the aryepiglottic fold is involved, laryngectomy is justifiable in types 1 and 2, but Coutard's deep X ray therapy is better in types 3 and 4. Laryngectomy, therefore, should be done where an intrinsic cancer has extended so far posteriorly that there is a probability that laryngo-fissure will be inadequate, especially if of type 3 or 4, and in extrinsic disease of limited extent if of type 1 or 2; but if the extrinsic growth is extensive, or (if limited) of type 3 or 4, radiation is preferable to any operation. It will be noticed that JACKSON makes no mention of the method of treatment of intrinsic cancer by radium applied by fenestration of the thyroid cartilage, which has been successfully developed in this country by DOUGLAS HARMER, and which is perhaps more satisfactory than removal by laryngo-fissure when the lesion is rather extensive and especially when it is of type 3 or 4 of malignancy.

To recapitulate, in Prof. JACKSON's view laryngo-fissure is the treatment of choice for strictly intrinsic growths even if they are spreading to the anterior commissure, and for lesions which have involved the anterior wall of the arytenoid eminence if of types 1 and 2. Laryngectomy is indicated when the growth has reached the arytenoid if it is of type 3 or 4, and for limited extrinsic growths of types 1 and 2. For all extrinsic tumours of types 3 and 4, and for more extensive extrinsic tumours of any type, radiation is preferable to operation of any kind.

[1] Amer. Jour. Surg., 1935, xxx., 3.

CHARLATANISM

QUACKERY is undoubtedly flourishing. In some European countries it is steadily increasing. Dr. WASSERBERG in an admirable essay[1] defines the charlatan or quack as "a person who engages in the treatment of the sick without possessing the requisite State authorisation for the purpose." In the United States the evil consequences of the wholesale freedom to treat the sick led to the passing of various laws against quackery, but whereas in Europe there are only two classes of "healer," the qualified doctor and the quack, in the United States a third class is recognised—namely, those with "limited licences" which comprises osteopaths, chiropractors, and numerous other healing cults. Dr. WASSERBERG dubs all these quacks, though, strictly speaking, they do not fall within the limits of his definition, being to some extent State-authorised healers.

Most countries prohibit quackery by law, but England and Germany are notable exceptions. In England, toleration of quackery is ancient and traditional; in Germany, it is comparatively recent, and the legalisation of quackery was actually supported in 1870 by VIRCHOW, LANGENBECK, and other men of liberal ideas who argued

[1] League of Nations: Quarterly Bulletin of the Health Organisation, September, 1935, p. 555.

that "the State was not entitled to grant the prerogative of treatment to any one class or to limit the citizen's freedom to seek advice and help where he chose." As a political gesture, the monopoly of the medical profession to treat the sick was abolished in France and Russia during the revolutions of 1792 and 1922 respectively. In both cases however it was speedily restored, for it was found to safeguard the interests of the State rather than those merely of the medical profession. Latterly there has been a steady curtailment of the quack's legal rights both in England and Germany. It must be admitted that whether quackery is legally accepted or not in any given country does not seem to influence the number of quacks practising in that country. They flourish, for example, just as much in France, where quackery is illegal, as in England, where it is not. Moreover quacks, like doctors, are found in proportionately greater numbers in towns than in rural areas, whence it follows that quackery does not in any measure depend for its existence on a scarcity of doctors. An inquiry concerning 1301 quacks in Berlin brought to light some interesting facts. It was found that a considerable proportion of them had had no more than an elementary school education. Nearly three quarters of them were over 40 years old, an observation suggesting that they had probably tried some other career first. The men outnumbered the women in the ratio of about two to one. Many of these charlatans of both sexes were drawn from the auxiliary medical services; for which, says Dr. WASSERBERG, the medical profession is to be blamed, in too lightly entrusting such persons with responsible therapeutic tasks and so giving them undue confidence in their ability to treat the sick. Post-war unemployment must also have encouraged many to take up quackery as a means of livelihood, but although the desire to make money may be the strongest, it is not the only incentive to quackery as a career. Other strong motives are a desire to rise in the social scale, or a fanatical faith in some system of healing leading to the founding of new cults. Nevertheless the financial allurements must rank first. It is estimated that, in England alone, the money spent in fees to quacks would endow 40,000 hospital beds. Quackery is undoubtedly "big business," and the quack knows how to sell his wares. Minor licence holders in the United States are taught salesmanship in their training curriculum, and the power of the press is recognised and used to good purpose. There are 150 quack periodicals in Germany alone.

It might be presumed that the quack's clientele is largely derived from the ignorant and illiterate, but in fact the reverse is true. Most of those who seek advice from quacks belong to the educated classes. It may therefore be interesting to inquire into why such persons go to the quack rather than to the doctor. The reasons are many, but some are obviously more important than others. Facile princeps, perhaps, is lack of therapeutic satisfaction. The intelligent layman often will not, or cannot, reconcile himself to the fact that he may be suffering from an incurable disease. No matter how many "orthodox" doctors he may have consulted, he will not accept the inevitable. Something, he feels, must be done about it, and so he turns to the quack. Whether or no he benefits thereby does not ultimately matter so long as the hope of recovery is kept alive. To such a patient anything is preferable to the cautious and reasonable pessimism of the honest doctor. Another important factor leading to disharmony between patient and doctor may well be the impersonal and objective method of approach which is bred of a modern scientific training. The "test-tube" doctor may lack that psychological perception which would teach him constantly to realise and remember that patients think of disease in terms of symptoms. To the patient, a "serious" disease is one which makes him feel ill or cramps his activities. Whereas the doctor is apt to dismiss lightly and treat casually minor ailments which may, subjectively speaking, be anything but trivial, the quack is unlikely to make this mistake. His very lack of pathological knowledge compels him to think and treat symptomatically, and the fact that he and his patient both talk the language of popular medicine makes for mutual sympathy. And what of the therapeutic successes of the charlatan? These are often more apparent than real. "Cures" are frequently claimed for diseases diagnosed only by the quack himself and, in reality, non-existent. Transient improvement in spontaneously remittent diseases is also hailed as cure. In some cases of self-curing disease the quack usurps the credit which rightly belongs to the healing power of nature, but it is among the functional disorders and the malades imaginaires that the quack is really at his best. Few such patients can remain completely impervious to his compelling and irresponsible optimism.

Finally, who is to blame for the continued existence of the charlatan? It would probably be just to reply, the doctor rather than the patient. We may accuse the sick layman of a taste for magic, of drawing false conclusions, and of a post-hoc-propter-hoc habit of mind; but the fact remains, when all is said, that if our therapeutics and methods of handling the patient were better, the raison d'être for the quack would disappear from civilisation and, with it, the quack himself.

SLEEP AND SLEEPLESSNESS

WE should understand insomnia better if we knew more about normal sleep. We may note the fall in systolic blood pressure, the slowing of pulse and respiration, the increase in oxygen intake, the reduction in carbon dioxide output, and the lowering of the basal metabolic rate and body temperature. These changes, as W. R. HESS has pointed out,[1] are in the vegetative functions most intimately connected with physical and psychic activity. But they are merely accompaniments of sleep; we can find no physiological change that is constant and essential. In general

[1] THE LANCET, 1932, ii., 1259.

terms the state may be described as a dissociation which affects the cortical centres chiefly and leaves the lower functions relatively unimpaired. That the lower centres in fact retain much power of action is shown by the "automatic" movements of the somnambulist, of the soldier sleeping on the march, and of the long-distance athlete. More rarely we read of useful mental activities: COLERIDGE is said to have created Kubla Khan in his sleep and MILTON tells of—

> My celestial patroness, who deigns
> Her nightly visitations unimplored,
> And dictates to me slumbering; or inspires
> Easy my unpremeditated verse.

Such examples make it clear that sleep does not, as is often supposed, imply deep unconsciousness. Rather does it consist in general relaxation of functions, the suspension of all effort—even the effort to go to sleep. As a rule the cessation of response to stimuli is the result of fatigue, and fatigue comes on more rapidly with inefficient working of the body; hence we are prepared to find that the more lowly organised the constitution the more sleep is needed. The short periods of sleep of intellectual men have often been remarked. Yet sleep and fatigue are not so intimately and reciprocally related as to simplify the problem how we sleep at all. For fatigue is not a necessary antecedent, and if excessive will indeed inhibit sleep. We sleep not so much because we are tired as in order to avoid becoming so; and the regular periodicity of sleep in a healthy person is a means of ensuring anabolic recuperation not only through physical rest but also by the avoidance of nervous stimuli with a katabolic effect. The attempt to eliminate all such stimuli is seen in the usual ceremony of going to bed, which includes the habitual disregarding of unimportant or familiar sounds—from street or farmyard, for instance. Reception is highly selective: the exhausted mother may sleep through the loudest noises but wake instantly at the faintest sound from her sick child; the doctor may be roused by the movement of wires preceding the ringing of his night bell. By a similar development of selectivity a patient will wake each time the clock strikes, and despite a good night's rest assert in all truth that he has heard every hour. Dr. H. M. NORTH, in an Australian discussion lately reported,[2] asks if the converse may not be true. Can a series of functional elements be rested whilst the organism as a whole is awake? Does the harassed business man sleep as the eager golfer watches his ball go prettily down the fairway? This is a question with direct bearings on the rationale of several forms of therapy, such as the prescription of a change of scene or occupation.

In assessing the effects of insomnia there seems to be no justification for the not uncommon fear of insanity; though sleeplessness is a common initial symptom in the psychoses. Naturally the discernible effects of experimental insomnia in man are meagre, while in animals that are kept awake they are apt to be confused with those of muscular exhaustion.[3] Nevertheless, lack of sleep undoubtedly plays an evil part in many an illness. Alternatively the rhythm may be deranged, and it is interesting to find a new remedy now suggested for the intractable day-and-night reversal often seen in encephalitis lethargica—namely, superior thoracic ganglionectomy, with which Dr. N. D. ROYLE reports success.[2] In treatment of ordinary insomnia the first consideration is of course the relief of such obvious causes as pain, cough, dyspepsia, pruritus, disorders of micturition, as well as frankly recognised emotional disturbances—all of which are comprehended in the term "extrinsic insomnia." Direct treatment is similarly required in disturbances of the cerebral circulation, such as anæmia, vascular hypertension and hypotension, and cardiac decompensation. But often in practice the patient's needs have ultimately to be met by the skilful use of hypnotic drugs. They are needed not so much to give sleep as to re-establish rhythm. Where sedatives alone are required, the bromides still retain their popularity and the favourite combination with chloral is hardly surpassable. The numerous derivatives of barbitone are usually selected according to the individual experiences of the prescriber. The late Sir MAURICE CRAIG used to recommend a mixture of barbitone with sugar of milk; while the total amount was kept constant the proportion of the inert ingredient was nightly increased at the expense of the drug until none of the latter remained. CRICHTON-MILLER[4] also recommends this method. NORTH[2] issues a warning against the use of morphia for an excitable patient except in association with hyoscine, whose depressing influence it corrects. That all hypnotics may be habit-forming drugs is emphasised by Dr. G. C. WILLCOCKS,[3] who points out that this applies even to paraldehyde—a drug generally held to be too unpleasant to promote a habit. In alcoholics, he says, administration of paraldehyde probably replaces one form of dipsomania by another.

One can of course regard insomnia almost if not entirely from the psychological aspect. The difficulty of getting to sleep has been explained as due to the unconscious wish not to sleep, on the principle that any over-determined conscious emotion is the result of the opposite unconscious wish—here perhaps an unconscious fear of terrifying dreams. The field of investigation along these lines is almost unlimited.

ON Thursday, Nov. 28th, at 5 P.M., at Charing Cross Hospital medical school, Prof. Edward Mellanby, F.R.S., secretary of the Medical Research Council, will deliver the biennial lecture on recent advances in science in their relation to practical medicine which was founded in memory of Thomas Henry Huxley, a former pupil of the school. Prof. Mellanby will speak on the rapid advance of science since the time of Huxley. Tickets for the lecture may be had from the dean of the school, Chandos-street, W.C.2.

[2] Med. Jour. Australia, August 10th, 1935.

[3] Gillespie, R. D.: Sleep and the Treatment of its Disorders, London, 1929, pp. 33 and 38.

[4] Crichton-Miller, H.: Insomnia, London, 1930.

ANNOTATIONS

A NEW SOURCE OF HORMONES

A PAPER communicated to the Biochemical Society on Nov. 15th by R. K. Callow, A. H. Laurie, and A. S. Parkes, affords an instance of an investigation leading to results in a widely separated branch of science. The work of the *Discovery* Committee on the whale fisheries has included an inquiry into the age of captured whales, one of the methods employed being an examination of the ovary of the female and a count of the old corpora lutea corresponding to the periodic ovulations. Since about half the females are pregnant, corpora lutea of pregnancy are common, and the availability of this material, collected together at the Natural History Museum in London, suggested an investigation of the hormone content, which was carried out at the National Institute for Medical Research. The investigation of the hormone content of yet another species is a familiar move in "academic" research, but in this instance the Gargantuan scale of the organs of the whale gives the result a practical importance. The clinical investigation and application of progestin, the hormone of the corpus luteum, has been seriously hampered by the high cost of reliable corpus luteum extracts.[1] No doubt an artificially prepared product will be on the market before long, but the available chemical methods are not easy, and it should facilitate the extraction of a natural concentrate if, instead of high-priced corpora lutea dissected from the sow's ovaries, and weighing about 1 g. apiece, the corpora lutea from whales, with the impressive weight of from 1 to 7 kg. each, are employed. The progestin content per gramme of the latter has actually been found to be comparable with that of fresh sow's corpora lutea. It is of particular interest to note that, whilst progestin had already, as might be expected, been found in corpora lutea removed fresh from the whale and immediately frozen,[2] the results now recorded were obtained with material collected under the ordinary conditions of whaling and preserved for many months in formalin. The availability of some thousands of these corpora lutea annually may lead to a striking change in the price of an important hormone.

SOME SOCIAL AND PSYCHOLOGICAL IMPLICATIONS OF ILLNESS

PHYSICIANS are reminded that they must treat patients not diseases, individuals not physiological systems. Most of those who would agree as to the necessity of this Hippocratic approach to medicine complain, however, of uncertainty in its application. The facts and procedure of which they can make use are so seldom set forth in text-books of medicine, or so vaguely alluded to, that it seems a matter of personal rather than collective experience, of common sense rather than science. This must always be in some measure true, as long as medicine remains an art. But there are now many studies which throw light on the problem of constitution and integration. It was in the field of mental disorder that these problems first received attention, since here they are most urgent. Psychiatrists are compelled by their subject matter to give thought to the connexions between different aspects of behaviour commonly distinguished as bodily and mental, and to see how these influence each other. Modes of reaction, types of personality, the relation between mental type and physical habit, and the influence of past experiences on present responses are topics that the psychiatrist cannot evade. It is therefore not surprising that much, though by no means all, of the outcome of scientific study of these problems gained currency in psychiatry earlier than in other branches of medicine. But it is not, on that account, esoteric knowledge, shrouded in the neologisms of the psychopathologist, or relevant only to insanity. It is as much or more the product of investigations in physiology, genetics, and anthropology than of psychology and psychiatry. The fruits of these investigations may be found in a work entitled "The Biology of the Individual," reviewed elsewhere in this issue. Reminiscent in its title of the well-known Brugsch-Lewy collection of monographs, but less detailed and more coherent, it serves to indicate, as that series did, the growing importance of work on constitution and modes of reaction. If, because of its provenance, this book gives much space to matters that are of special interest to the psychiatrist and sociologist, it is none the less significant for internal medicine, in which the social and psychological implications of illness are not likely nowadays to be overlooked.

SUNNIER ELECTRIC LIGHT

THE thesis that illumination should no longer be regarded as serving a single purpose, that of providing light for vision, is developed in a publication that reaches us from America.[1] Dr. Luckiesh has collected a number of important observations, arising from his own experimental work and that of well-known American and European authorities, from which he concludes that under modern urban conditions, necessitating indoor life, the addition of short-wave (near ultra-violet) light has become essential for the maintenance of health. In other words, the majority of town-dwellers being deprived by their mode of life of the benefits attributed to unscreened sunlight, it becomes the task of the scientist and finally of the architect and the trade to adopt new standards in illumination. Dr. Luckiesh maintains that the simulation of sunlight should be adopted by progressive urban communities for indoor lighting, sunlight being now universally recognised as a powerful environmental factor. The physical factors involved are reviewed and also the therapeutic effects of irradiation with well-defined areas of the spectrum in the ultra-violet and infra-red regions. The observations of Hasselbach, Hausser, and Coblentz are summarised and the problems of transmitting media, reflection, and permanency of materials are discussed. Dr. Luckiesh points out that curative reactions should never be contemplated, but that the problem of "prevention" should be shouldered by the designer and architect under the inspiration of recognised medical and scientific knowledge. In conclusion definite proposals are made for sources of illumination responding to the supposed requirements.

This able study opens many questions which the medical profession would be well advised to watch closely. The importance to the vast army of town workers of the changes in illumination here

[1] Cf. Bishop, Cook, and Hampson: THE LANCET, 1935, i., 139; also Williams, L.: Ibid., Oct. 5th, 1935, p. 796.
[2] Jacobsen, A. P.: Tidsskr. f. d. norske lægeforening, 1935, No. 5.

[1] Artificial Sunlight. By M. Luckiesh, D.Sc., Director Lighting Research Laboratory, Edison Lamp Works-National Lamp Works, General Electric Company, Cleveland, Ohio. London: The Technical Press. 1935. Pp. 254. 21s.

contemplated requires careful consideration, and the "emission" of the lamps to be used is not a question which should be left to the commercial interests concerned. Enough is already known of the possible ill-effects of over-exposure to unscreened sources of ultra-violet energy to deter us from using experimental methods in order to arrive at our conclusions. The experimental scientist is not on safe ground when he proposes to emulate midsummer sunlight. There will be no variations of intensities in the artificial source of illumination comparable to those of "rising" and "setting," no clouding and no seasonal variations, worst of all—no intermittance, or night. The more efficient the lamp the greater the danger to the public. Dr. Luckiesh remarks, and his words have a sinister quality, that in congested cities ground areas are being wasted to admit inadequate and uncertain daylight; that even at the present time, when adequate and controllable artificial light is economically possible, architecture and the indoor world are suffering from the daylight lighting habit. Even the recessing of buildings is deplored as uneconomical.

If the only remedy to the discomforts of life in over-built areas is to be found in such counsels of despair, it is time for public opinion to be aroused. Their application in Great Britain would be even more grievous than in more southerly regions; town-planners and even health authorities forget too easily that the geographical position of England should be carefully considered before American or continental suggestions are adopted. The fact that New York and Madrid are situated in the same latitude and that London is ten degrees further north should never be left out of account. The improvements and rebuilding of some parts of our northern towns have cast a permanent shadow on the surrounding inhabitants. There are some open places and playgrounds in our cities which have been converted into deep wells by "property improvement," and any further developments in this direction in the name of science should be resisted.

THE GORDON SYNDROME

IN the *Policlinico* of Oct. 14th L. Paterni and P. Maroncelli, of Rome, record the result of their studies of the peculiar encephalitic syndrome (rigidity, incoördination, ataxia, and paresis, accompanied by wasting) described by M. H. Gordon in 1932 as produced in rabbits by the intracerebral injection of suspensions of lymphatic glands from cases of Hodgkin's disease. As similar suspensions of glands from other conditions did not have this effect it was suggested by Gordon that intracerebral injection of the rabbit provided a biological test, of practical application, for lymphadenoma, which would be useful especially where the histological picture is atypical. As related in our issue of Oct. 19th (p. 895) confirmatory evidence of the diagnostic value of the test has since been published by van Rooyen and Ogilvie, by van der Hoeden and Hulst, by Davis, and by Bortolozzi. In 1933 however it was shown by Friedemann and Elkeles that suspensions of normal bone-marrow and occasionally of spleen and leucocytes can produce this same syndrome in the rabbit. Subsequently Mackenzie and van Rooyen confirmed this and showed that the action was not due to the proteolytic enzyme of Jochmann. There is an incubation period of one or more days before the encephalitic syndrome appears and histological examination of the central nervous system of the affected animals has revealed lesions indicative of meningo-encephalitis. Guinea-pigs develop the same signs and lesions and van Rooyen has shown that ferrets are susceptible, but mice appear to be unaffected.

The Italian investigators tested lymphatic glands from seven patients by injecting suspensions of them intracerebrally into rabbits. The first patient had fairly typical Hodgkin's disease and a positive Gordon syndrome was produced in all of three rabbits. In the second patient Hodgkin's disease was associated with tubercle: glands removed during life, and others removed after death, produced the syndrome on intracerebral inoculation, but not on intravenous or intraperitoneal injection. The third case was one of tuberculosis of the glands of the neck, and the three rabbits injected were still healthy after three months. The fourth patient also had tuberculosis with bilateral lung involvement and positive sputum, and the two inoculated rabbits developed the syndrome after 16 and 18 days, dying a week later. In the fifth case—another instance of tuberculosis of the glands of the neck—one rabbit died after a few days from unknown cause, the other remained well for two months. The sixth patient had chronic leukæmic lymphadenitis and the result was negative, while the seventh had chronic leukæmic myelosis (white cells 200,000) and the two rabbits which were injected both showed Gordon's syndrome. A suspension of the leucocytes from this last patient was now tested on two rabbits: one remained unaffected, the second developed meningo-encephalitis after ten days. A second case of myelocytic leukæmia being available, this last experiment was repeated with positive result in both of two rabbits. Paterni and Maroncelli found that suspensions of active material from the two Hodgkin patients gave negative results when injected into rabbits elsewhere than the brain. The histological lesions found in the central nervous system of the affected animals varied and their intensity was not in proportion to the severity of the symptoms. There was evidence, however, of myelitis as well as meningo-encephalitis so that the condition appears to be one of meningo-encephalo-myelitis with lymphocytic infiltration (especially perivascular), foci of necrosis, and retrogressive changes in the nerve-cells of the brain and spinal cord, the anterior horn cells being notably affected. The conclusions reached are briefly that Gordon's results with Hodgkin's disease are definitely confirmed; that a positive result is obtained more easily if the material is kept on ice for some time; that a positive result is obtainable also in other diseases of the hæmopoietic system; that a positive result is obtainable not only with gland tissue, but also with spleen, liver, and nerve tissue; that the severity of the reaction bears no relation to whether the case of Hodgkin's disease is typical; that negative results may be obtained with blood, cerebro-spinal fluid, and skin, although the same case may give positive results with gland, spleen, and liver; that positive results may also be got in guinea-pigs, though less severe; and that in rabbits as little as 0·1 c.cm. of 20 per cent. suspension of lymph gland may be enough to cause the syndrome. Attempts at passage were all negative, and no protective properties were found in the blood of animals that recovered.

In a discussion of their results Paterni and Maroncelli emphasise the importance of the failure of passage, and consider that this is a strong argument against the infective nature of Hodgkin's disease. The syndrome is obtainable with tissues from normal persons and also in other diseases, so that Gordon's test for the diagnosis of Hodgkin's disease is not

specific. On the other hand, it opens up a biological problem as to the nature of the encephalitogenic agent existing in health and also in organs from cases of disease of the hæmopoietic system. Furthermore there seems no reason to doubt that the syndrome is of real practical utility for identifying glands from cases of lymphadenoma. In the hands of Gordon himself, who retains the rabbits for only a week after inoculation, glands tested at St. Bartholomew's Hospital from suspected cases of lymphadenoma over a period of three years gave the following results[1]: glands from lymphadenoma cases, 35 tested, 30 positive; glands from conditions other than lymphadenoma, 67 tested, 67 negative.

FOR AND AGAINST DOCTORS

"If a hundred or a thousand people, all of the same age, of the same constitution and habits, were suddenly seized by the same illness, and one-half of them were to place themselves under the care of doctors, such as they are in our time, whilst the other half intrusted themselves to Nature and to their own discretion. . . ."

THIS outline of a neatly controlled experiment, though of modern pattern and indicating a critical attitude to therapeutics which is generally regarded as peculiar to our own times, is actually taken from Thoughts from the Letters in J. Lohse's translation of Petrarch. The forecast of the result of such an experiment hazarded by Petrarch's medical friend is not flattering to our profession; but the compilers of the anthology "For and Against Doctors"[2] where it is to be found, with many other biting comments on our art, deem it not surprising that mediæval doctors were held in low esteem by the public; the qualified "leech" of the Middle Ages derived his knowledge almost entirely from Arabian commentaries on the books of Hippocrates and Galen and had little or no practical training. A large part of actual practice, however, was in the hands of unlearned men, generally in religious orders, who were probably like hospital orderlies or the village nurse, and acted independently. It is in the mediæval section of this anthology that we find most of its gems, though ancient Chinese records have yielded comments still apposite—for example: "The skilful doctor knows by observation, the mediocre doctor by interrogation, the ordinary doctor by palpation." The "modern" section is said to include only a few extracts from English literature of the nineteenth and twentieth centuries, culled almost at random, but, we may add, with fine discrimination. Here, as Dr. Hutchison and Dr. Wauchope point out, the praise is more generously bestowed than in earlier periods, but alas, even in an age of advancing technique and scientific discovery, it is mainly for kindness and moral support rather than for professional skill. If therefore we have dwelt here on the bitter rather than the sweet in this collection it is because much of the latter has an emotional flavour, being addressed to heart rather than to head. And also perhaps, because there is a malicious pleasure in letting others say what we are debarred from saying ourselves. For in the words of Miss Joyce Dennys quoted at the end of this delightful anthology: "Of course everybody knows that Doctors never say anything unkind about each other, it is part of their Unwritten Law and a sore trial to nearly all of them."

[1] Gordon, M. H., and Gow, A. E.: Proc. Roy. Soc. Med., 1934, xxvii. (Sect. Med., p. 49).

[2] For and Against Doctors. An anthology compiled by Robert Hutchison and G. M. Wauchope, and illustrated by Miss Barclay-Smith. London: Edward Arnold and Co. 1935. Pp. 168. 7s. 6d.

ANATOMY AT ST. THOMAS'S

THE extensions and alterations of the anatomical rooms, which have been in progress in the medical school at St. Thomas's Hospital, are now complete, and a compact and well-equipped department was visited last week by fellow anatomists and others on Prof. A. B. Appleton's invitation. The new two-floored buildings occupy an area lying behind the old dissecting-room. The upper floor is given over to laboratories, including the professor's rooms and technicians' work-room; this position gives excellent lighting. The flooring here, and in the X ray room, is of Granwood, a composition in blocks looking very like wood, which seems to promise a long and serviceable life. Other rooms, on the lower level, comprise museums, filing offices and work-rooms, radiological and photographic rooms, and, of course, the dissecting-room. All these, with two lecture theatres, make a well-ordered and contained section of which the medical school may justifiably be proud.

Medical men whose first education in their profession dates back some forty years or so have memories of a dissecting-room and a cloak-room, and little beside this, in which they carried through their anatomical studies. It would probably cause them some astonishment to come within the circuit of a modern department of anatomy, especially if they have had occasion to read some recent remarks on the futility of anatomical knowledge, with the suggestion of the moribund senescence of the subject. There is no sign of such decay. On the contrary, there is enthusiastic research by numerous workers in ever-widening fields, and the dissecting-room is only one of the many laboratories which are necessities in every modern department. A visit to one such as this at St. Thomas's, with its modern methods both in work and teaching, should convince any honest mind that anatomy has advanced and widened more rapidly than some other subjects which come under the ægis of medicine.

A YEAR'S WORK ON ASTHMA

OSLER pointed out that the student of syphilis gets to know the whole of medicine. The Asthma Research Council is coming to much the same conclusion about the study of asthma. The latest report of progress[1] admits that the asthma problem has so many sides that rapid progress cannot be expected. The problem in fact still remains unsolved in its essentials, but at five centres work on a particular line of inquiry is going on with a view to laying bare one root of the baffling problem. At Guy's E. T. Conybeare and L. J. Witts have been estimating the degree of improvement which may be expected in asthmatics as the result of general medical care and advice without the use of any specific treatment. At the same time R. S. Bruce Pearson is attempting by physical methods to reproduce the conditions which the patient believes to have precipitated attacks. At Guy's all patients go through a probationary period of two months in which they perform the exercises recommended by the Council. Among asthmatic children C. H. Rogerson continues his study of the psychological factors lowering the threshold for stimuli which ordinarily produce an attack. The intelligence of these children is above the average, but many of them have to contend with a difficult environment, often indeed parental

[1] Asthma Research Council. Report of Progress for the Year ended Oct. 31st, 1935. Copies free from the secretary of the Council, c/o King's College, Strand, London, W.C.2.

over-protection. At St. Mary's over 150 cases of angioneurotic œdema have been investigated and nearly as many cases of migraine of an allergic character. Desensitisation having proved very laborious and exacting, the more intelligent patients are now being taught to inoculate themselves at home. Against the hay-fever season of 1936 a great store of antigen has been amassed: 28 lb. of pure grass pollen—equivalent, it is said, to 58×10^{16} grains of pollen. This yield has been rendered possible by building and equipping a pollenarium alongside six separate crops of grasses and grain grown on Lord Iveagh's estate at Pyrford. Heather pollen fever is regarded as not uncommon and provision is being made for that also. At King's College Hospital the physical side of treatment takes precedence. There it is accepted that the asthmatic is apt to breathe uneconomically even in the period between attacks. If three things can be secured—viz., (1) automatic diaphragmatic breathing, (2) a chest expansion of a certain degree, (3) ability to exhale continuously for at least thirty seconds—success in treatment is almost assured. In fact an attack can often be prevented from coming on by doing the exercises. At King's College work is biochemical. J. L. D'Silva has made it seem probable that in bronchial asthma the functions of the sympathetic nervous system are in some way depressed. In hay-fever patients it is found that the serum potassium is considerably higher than in normal people, this observation being the first evidence of a material difference capable of analysis between the chemical processes of asthmatic and normal persons. A broncho-dilator substance extracted from broom and resembling adrenaline is being prepared for clinical trial. At Leeds investigation is again on the physical side. Observations suggest that the over-expansion of the chest in asthma is not due to true emphysema; in fact the chief deformities observed in asthmatics often yield readily to treatment and breathing exercises are effective in correcting the observed deformities. Finally, at the Charterhouse Clinic G. S. Scott and Harry Coke are able to register the constitutional effects of X rays, applied in moderate doses to a large body area, by a serological precipitation test. Pure allergic asthma, they think, responds best to X ray treatment. The report mentions many other investigators and their work.

RADIUM PROTECTION BY BUILDING MATERIALS

THE use of radium in relatively large amounts for the beam treatment of cancer is extending, and the National Physical Laboratory is endeavouring to supply designers of radium departments with data on the measures which should be taken to secure for those who work near "bombs" a degree of protection up to the standards laid down in the International Recommendations for X Ray and Radium Protection. In a paper read last week by Mr. G. W. C. Kaye, D.Sc., in association with Mr. G. E. Bell, M.Sc., and Mr. W. Bink, M.Sc., before the British Institute of Radiology, the part which building materials can play in providing this protection was further considered. Their experiments were conducted under everyday conditions when scattered radiation is pronounced. The materials tested were full-scale walls of brick from 4 to 23 in. thick, of coke-breeze from 3 to 9 in. thick, and of concrete from 1 to 14 in. thick. Solid steel doors up to 4½ in. thick, as well as various thicknesses of lead and aluminium, were also tested. Up to several grammes of radium were used as a source of radiation, and the measurements were made by means of thick air-walled ionisation chambers, so as to simulate the conditions of deep-seated tissue. In the past it has been customary to regard the absorption of gamma rays by different materials as proportional to their densities, but Dr. Kaye and his colleagues have been able to show that while the relationship is sufficiently exact for the lighter elements, up to (say) barium, it requires correction when comparing light and heavy elements owing to photo-electric absorption in the latter. Protective values are generally quoted in terms of lead. When these are translated into terms of building materials by the aid of the density law, it now appears that the thicknesses deduced should be increased by as much as 40 per cent. for unshielded radium, and 60 per cent. for the radium beam from a typical present-day bomb.

THE IRRADIATED CELL

AT a time when intensity is the subject of discussion in every clinic where attempts are being made to establish a scientific basis for the technique of radiation a statement in the introduction to the green book on radium therapy just issued by the Medical Research Council [1] claims attention. Referring to the work of Mr. F. G. Spear, D.Sc., and his colleagues at the Strangeways Laboratory, it says:

> "The reaction of the tissue which they have been using is not a simple function of the dose of energy released in it. They find in fact that to get a well-recognised effect there is an optimum intensity at which the release of energy may occur. That is to say the effect is observed with a minimum absorption of energy, provided that the energy is absorbed by the tissue at a particular rate."

The facts established by Dr. Spear are in general well known. The minimal threshold dose, latent period, diminution in cell division, and subsequent compensatory increase with abnormal mitotic figures are recognised biological responses to irradiation, and it is now possible with the help of the physicist to measure with much greater accuracy the dose actually received by the tissue which produces these effects. We are told that using the Sievert unit of dosage for gamma rays, working between 460 and 1660 units of dose, the existence of the compensatory increase depends on the intensity at which the dose was given. The intensity varied from 184 to 469 units, a ratio of one to 2·5, and the effect is seen with the lower intensity and longer time of exposure, but not with the higher intensity. To get this variation of intensity a similar variation in time is necessary, and it is again clear that intensity and time cannot be separated particularly with single doses. We thus return to the position, long since established by Regaud, that biological response is a function of at least two variables, dosage and time, on which intensity obviously depends. This is recognised by Dr. Spear who investigated this aspect of the response by fractionating the dose and found, for the tissue examined, that there was an optimum spacing for diminishing mitosis; it is of interest that in cultures derived from normal and malignant tissue, cultivated under similar conditions, the same dose of gamma rays causes a greater fall in cell division in the malignant than in the normal tissue growth. In-vivo experiments with chick embryos were used to show the relative importance of direct and indirect effects of irradiation. It was clearly demonstrable that the variation of mitosis following irradiation closely resembles that following

[1] The Medical Uses of Radium, see THE LANCET, Nov. 9th, 1935, p. 1083.

the exposure of tissue cultures to irradiation, and is a direct effect on the cell. The dose which has delayed lethal effect on the embryo is little over half that which affects the blood-vessels and destroys the circulation; but in the post-circulatory chick the compensatory effect, as given by the number of cells in mitosis counted over a period of four hours following irradiation, appears rapidly and gives a steep curve. This shows that the presence of a blood-supply has an important bearing on the recovery of the irradiated cell, but dosage high enough to injure the blood-cells or, at a still higher level, the endothelial cells of the vessel wall has not so far appeared to be compatible with the survival of the embryo; and although it is suggested that this effect is again a function of intensity it would appear to be a result of lethal dosage. Work by Miss Muriel Robertson, D.Sc., at the Lister Institute on *Bodo caudatus*, on which we commented recently,[2] brings out two points: that there appears to be a "radium conditioning" in cultures exposed to gamma rays of radium at non-lethal intensity, and that when cultures are re-irradiated a full generation time may be used between re-irradiations without significant loss of total effect. Histological studies at the Bland-Sutton Institute suggest that vascular changes are superimposed on the direct effect with high intensities, but there is nothing to show that it is not the time factor rather than actual intensity which determines this.

If we attempt to relate these experimental findings to the clinical problems which confront us it is at once apparent that the question of intensity is not yet settled. The fact that fractionating the dose appeared to show that there was an optimum spacing, possibly different for different tissues, may be related to the "generation time" of the bodo, and the two findings together suggest that it may be possible to fractionate a dose, to obtain the full value of the time factor, without sacrificing the optimum intensity, should this prove to be higher than is compatible with continuous or prolonged daily irradiation.

VOLUNTARY HOSPITAL POLICY

WE learn from the Statistical Review issued by King Edward's Hospital Fund for London[3] that 2,139,000 sick and injured were tended by the London voluntary hospitals in 1934, 269,000 occupying beds and 1,870,000 being treated in the out-patient departments. These are record totals, the major part of the increase for each category being in 1934. A total expenditure of 3¼ millions in 1930 rose to nearly 4 millions in 1934; the rise would have been greater had there not been some fall in prices during the period. Receipts clearly show the effects of the 1931 crisis. The 1930 total of £4,912,000 dropped during the next two years by nearly £600,000; a recovery of £100,000 in 1933, and a larger increase of £480,000 in 1934, brought the total up to nearly what it was at the beginning of the period. Voluntary gifts remained almost constant—a testimony to public appreciation of the work of the voluntary hospitals. Increased receipts from patients and public authorities for services rendered kept up the total ordinary income for maintenance. During 1934 the balance of income (including legacies) over expenditure for the whole of the 145 hospitals showed a narrow margin of £93,000; 91 hospitals had surpluses and 54 deficits. These figures for 1934 lead the economy committee of the Fund to draw two conclusions:—

(1) The work of the voluntary hospitals in London continues to grow not only in scale but also in quality as a result of the progress that has been made in curative medicine and surgery. The hospitals have thus been enabled to provide more and more effective treatment for a continually increasing number of the sick poor for whom they were originally founded and who remain their first care. The advances in therapeutic knowledge and skill have inevitably led to demands from other sections of the community that they should not be debarred from the benefits of the progress, and the voluntary hospitals, in adapting themselves to the changing conditions brought about by the ever-developing coördination of social life in this age, have met the necessities of the case by enlarging their field of service, which now includes not only the indigent sick and a large body of wage-earners who make substantial contributions either direct or through contributory schemes, but also persons of limited or moderate means who are admitted to pay-beds.

(2) In the aggregate the receipts, including both voluntary gifts and patients' payments, have kept pace with the increased maintenance expenditure. The voluntary gifts to maintenance show a substantial increase since the war, in addition to which large amounts have been received from this source to increase permanent endowments or to meet the heavy expenditure on schemes of extension and improvements or reconstruction at existing hospitals, as well as on buildings for new hospitals. This capital expenditure has been a marked feature of the finance of the voluntary hospitals in recent years, though since the crisis in 1931 some hospitals have had to postpone necessary expenditure for re-equipment, reconstruction, &c.

These figures may go far to dispel the doubts which are sometimes expressed regarding the present-day financial stability of the voluntary hospital system, but Mr. R. H. P. Orde last week expressed grave anxiety about the position. Mr. Orde is hon. secretary of the British Hospitals Association and he was speaking at the annual conference of the Incorporated Association of Hospital Officers. He recalled the departmental voluntary hospitals committee of 1921 which recommended Government grants towards maintenance and extension, the recompensing of hospitals in compensation cases, the remission of legacy and succession duties, and grants for training of nurses—all these things being measures of the barest justice. But because the voluntary hospitals were themselves without any machinery or organisation to compel consideration, this report came to naught, and the hospitals are still trusting to individual appeals to the heart. The strength of the voluntary system, he is satisfied, lies in its freedom from statutory control; its weakness is due to a lack of what might be called self-control. There are some who dread the acceptance of Government grants, but hospitals have taken and take money from where they can get it, and already they are supported as much from payments for services rendered as from charitable gifts. Let the voluntary hospitals in every area establish real and effective friendly contact with the public authorities; let them drop their wasteful rivalry, and let them look upon the voluntary hospital as part of a national scheme. The danger to the voluntary hospital system does not, in Mr. Orde's view, come from outside but is inherent in the system itself. Let it move while there is yet time.

THE Minister of Health has appointed a Central Housing Advisory Committee, under the new Housing Act, whose members will offer advice on questions submitted to them, and may make representations to the Minister on any subject of general concern in relation to housing. The names of the Committee are given on p. 1211.

[2] THE LANCET, Sept. 21st, 1935, p. 675.
[3] From the office of the Fund, 10, Old Jewry, London, E.C.2. Pp. 32. 1s.

PROGNOSIS

A Series of Signed Articles contributed by invitation

LXXVIII.—PROGNOSIS OF ULCERATIVE COLITIS

DANGER TO LIFE

Hospital patients.—From a discussion on ulcerative colitis held at the Royal Society of Medicine in 1909 it emerged that no less than 141, or 50 per cent., of 288 cases collected from the records of seven London hospitals died in hospital. The ultimate mortality was presumably considerably greater. Bellingham Smith (1928) reported that 24 out of his 46 cases, or 52 per cent., had died, 13 under medical and 11 under surgical treatment. With this exception recent statistics have shown a smaller death-rate than that of the 1909 collection of cases. Thus J. R. B. Hern (1931) gave the mortality in Guy's Hospital of 50 cases between 1917 and 1926 as 28 per cent.; as an additional 12 per cent. died within a comparatively short time of their discharge the total mortality was 40 per cent. Hardy and Bulmer (1933) recorded 31 deaths among 95 patients in the General Hospital, Birmingham, between 1920 and 1932, a mortality of 33 per cent. The mortality was highest in the first year and thereafter diminished rapidly with every year of survival.

Private patients.—The statistics quoted above were taken from hospital patients. The mortality among patients seen in private practice, especially when they have had the advantage of institutional treatment, is very much less. Thus 7 out of 35 patients seen by E. Spriggs at Ruthin Castle, or 20 per cent., died there or in the two to twenty years which have elapsed since their admission. Of these, 2 received no treatment whilst at Ruthin, and 3 were hopeless on admission; the 2 former at least should be excluded, which would reduce the mortality to 12 per cent.

Forty patients with ulcerative colitis were admitted into New Lodge Clinic between 1921 and 1934. None died in the clinic, although in the large majority the disease was of a severe character, and only 3 have died since leaving it, in each case as a direct sequel of operation. The history of these fatal cases is as follows:—

1. The first was a woman of 56, who insisted on leaving the clinic at the end of a week, before there was time to institute any serious treatment. She was a case of average severity and should have done well with prolonged medical treatment. Unfortunately within a few days of leaving a colectomy was performed, in direct opposition to our advice, since a fatal issue from a one-stage operation in the acute phase of the illness was almost inevitable.
2. The second case was a woman with severe peri-anal suppuration and multiple fistulæ in addition to ulcerative colitis. She was therefore transferred to a hospital for colostomy after being in the clinic thirty-seven days. The pelvic colon was accidentally perforated during the operation, and she died twenty-eight days later from general peritonitis.
3. The third fatal case was a man of 56 with severe colitis. Very little improvement occurred during the three weeks he was in the clinic. For family reasons he had to go to Ireland, where a month later an appendicostomy was performed, death occurring shortly afterwards.

If the patient who was in the clinic for only a week and died after colectomy shortly after leaving is excluded, the mortality is 5 per cent.; if she is included it is 7·5 per cent.

I believe that the mortality should not exceed 5 to 10 per cent. if patients receive adequate treatment for sufficient periods. As Hardy and Bulmer point out, there are few diseases in which a patient can reach such a state of emaciation and exhaustion and yet recover.

Table I. shows the contrast between the results in private and hospital patients—the Ruthin Castle and New Lodge Clinic statistics on the one hand, and those of Guy's Hospital (Hern) and the General Hospital, Birmingham (Hardy and Bulmer), on the other.

TABLE I

Total mortality-rate in private and hospital patients

	Total.	Deaths.	Percentage.
New Lodge Clinic and Ruthin Castle ..	75	10	13·3
Guy's Hospital and General Hospital, Birmingham ..	144	51	35

PROSPECTS OF COMPLETE RECOVERY

I believe that a large majority of patients with ulcerative colitis, however severe, should recover eventually so completely that they are able to lead a life of normal activity. There is a very great tendency to recurrence, but as time goes on, especially if each recurrence is treated by complete rest in bed and by whatever other measures appear necessary from the earliest possible moment until the clinical evidence and sigmoidoscopic examination show that all traces of active disease have passed, the recurrences become milder and more infrequent until finally they cease.

Relapses tend to occur with acute infections, especially tonsillitis, food poisoning, dietetic indiscretions, exposure to cold and damp, and, much less frequently, fatigue from mental or physical overwork. If the first attack is thoroughly treated at its onset and treatment is continued for sufficiently long, relapses are unlikely to occur. I have only had an opportunity of seeing one case at the onset of the first attack.

The patient was a boy of sixteen whom I saw with Dr. W. H. Bradley at Downside in the early morning of the third day of his illness. He had a high temperature and diarrhœa, and large quantities of blood with pus and mucus were passed with each stool. Sigmoidoscopy showed the typical appearance of severe ulcerative colitis, and cultures made from the stools grew Flexner's dysentery bacillus. He was given 40 c.cm. of antidysenteric serum intravenously twelve hours later. The following evening his temperature fell to normal and it did not rise again. The diarrhœa ceased and by the thirteenth day did not even contain occult blood. There has been no recurrence in the eight years which have since elapsed.

When a patient first comes under treatment after he has already been ill for months or years, recovery is always very slow, and a year or more may elapse before he is able to return to activity. For the next few years he will remain very liable to relapse, but it is astonishing to find how complete the recovery may ultimately be in spite of the presence of severe organic complications, such as multiple strictures and polyposis. The appearance of the colon when examined after an opaque enema may show a complete disappearance of the normal outline, and yet the patient may have had no diarrhœa or other symptoms for years. In such cases the mucous membrane when examined with the sigmoidoscope

may be quite healthy, or it may show the presence of scars and occasionally of polypi, or a stricture extending to the lower end of the pelvic colon or into the rectum itself, when it may prevent the passage of an instrument more than a very short distance.

In Table II. I have adopted the classification used by Spriggs in his analysis of the Ruthin Castle cases, which include 13 of chronic ulceration after amœbic dysentery in addition to 35 of ulcerative colitis, and have added the New Lodge Clinic series of 40 cases of ulcerative colitis. I have had a report about every case but one within the last two months.

TABLE II

Cases of Ulcerative Colitis who received some form of treatment whilst at Ruthin Castle or in New Lodge Clinic from twenty to one year ago

—	Ruthin Castle.	New Lodge Clinic.	Total.	Percentage.
Well and "carrying on"	34	32	66	77·6
No relapses	21	17	38	—
Relapses, but recovered from them	13	15	28	—
Not well, but "keeping better and about"	5	4	9	10·6
Ill	1	1	2	2·4
Dead	5	3	8	9·4
Total	45	40	85	

COMPLICATIONS

Table III. gives the frequency of the complications occurring among 693 cases treated at the Mayo Clinic (Bargen, 1929) and 40 cases at New Lodge Clinic. In many instances two or more of the complications occurred in the same individual.

TABLE III

Frequency of complications in 693 Mayo Clinic and 40 New Lodge Clinic cases

—	Mayo Clinic.		New Lodge Clinic.	
	Total.	Per cent.	Total.	Per cent.
Polyposis	69	10	5	12·5
Strictures	59	8·5	5	12·5
Arthritis	30	4	1	2·5
Fistulo-in-ano and perirectal abscess	26	4	5	12·5
Perforation	23	3	0	—
Cutaneous lesions	17	2·5	1	2·5
Cancer of the rectum or colon	15	2	0	—
Achlorhydric gastritis	—	—	3	9
Nephritis	8	1	1	2·5
Endocarditis	7	1	0	—
Ocular disease	5	1	1	2·5
Mesenteric thrombosis	3	0·5	0	—
Thrombo-phlebitis	—	—	1	2·5

Polyposis.—The first references to polyposis of the colon as a complication of ulcerative colitis appeared in *Guy's Hospital Reports* for January, 1925, when C. Ive described a case under my care at Guy's Hospital. Since that time polyposis has become recognised as a common sequel of partial or complete healing in very chronic cases, the actual incidence being about 10 per cent. The polyps form as healing occurs. Most are composed of mucous membrane, containing much inflammatory and granular tissue, but occasionally true adenomata develop. This has been proved by microscopical examination in several of my cases and also at the Mayo Clinic. The polypi are readily recognised with the sigmoidoscope, but they must be distinguished from the tags of mucous membrane which are occasionally left as islands in extensive areas of ulceration. Their extent can be recognised with the X rays, although much care is required in interpreting the radiograms. Polypi may give rise to hæmorrhage after recovery from the colitis, and they may also form foci of infection, which may be the starting-point of a recurrence.

Carcinoma may develop as a result of malignant degeneration of an adenomatous polyp occurring as a complication of ulcerative colitis, though the large majority of adenomata which become malignant are not secondary to any form of colitis. Fifteen such cases occurred in the Mayo Clinic series; many were in young individuals and the carcinoma was always of a high degree of malignancy. I have seen 3 cases, none of which is included in the New Lodge Clinic series. In 1 the growth developed three years after complete recovery from the ulcerative colitis. The second case was a woman of 50 who had been ill for several years; active ulcerative colitis, multiple polyposis, and a carcinoma of the rectum were all present together when I first saw her a fortnight before her death from exhaustion. In the third case a carcinoma developed in the cæcum in a man of 42, who had had symptoms for ten years; the ulcerative colitis was still active but showed signs of healing; two small polypi were present in the rectum. Death followed an exploratory laparotomy in which minute secondary deposits were found scattered over the whole of the parietal and visceral peritoneum.

Stricture.—The first record of the association of stricture as a complication of ulcerative colitis appeared in *Guy's Hospital Reports* for 1925, when Ive and Venables each described a case which had been under my care at Guy's Hospital and New Lodge Clinic respectively. Strictures develop in the course of healing of very chronic cases, generally without any change in the symptoms. As the rectum and pelvic colon are frequently involved, the condition can often be recognised with the sigmoidoscope. Its extent can only be ascertained with the X rays after a barium enema, which often reveals two or even three separate strictures. It is, however, very difficult to distinguish between an organic fibrous stricture and one resulting from spasm by either method, as a spasm may remain unaltered for weeks. An operation is indicated only if X ray examination after an opaque meal shows that there is stasis above the stricture in spite of the presence of diarrhœa. I have had three such cases, in each of which complete recovery followed a short-circuiting operation, without which death would almost certainly have occurred.

Perirectal abscess and fistula-in-ano.—Perirectal abscess is a serious complication. It may develop as a result of infection of one or more anal crypts from the purulent rectal discharge, or one or several fistulæ may develop as long tracts burrowing high up the rectum from beneath the anal sphincter. This complication may occur during the active stages of the disease, but I have seen three cases in which it only became manifest after apparently complete recovery, giving rise on each occasion to a recurrence of the colitis of more or less severity. Painful anusitis with secondary spasm of the anal sphincter is a still more common complication—the result of long-continued diarrhœa, sometimes aggravated by carelessness in the administration of colonic douches.

Perforation.—Perforation of an ulcer occurred in 3 per cent. of the Mayo Clinic cases, but in only 1 of about 100 cases I have seen. It was, however, the

cause of death in 6 out of 38 fatal cases occurring among 55 cases at Guy's Hospital between 1888 and 1907.

Cutaneous complications.—Numerous cutaneous complications were observed in the Mayo Clinic series. The most important is the development of deep irregular sloughing ulcers. This complication occurred together with suppurative conjunctivitis, scleritis, and iritis in one New Lodge Clinic case; here both the cutaneous and ocular symptoms appeared to be the result of vitamin deficiency in an anæmic patient, suffering from a severe infection, who had been kept for a long period on a very inadequate diet. Pellagra may also occur under similar conditions.

Ocular complications.—Burrill Crohn (1925) has described the occurrence of conjunctival and corneal inflammation as a result of vitamin deficiency in patients with ulcerative colitis who had for long periods been kept on too strict a diet, The condition is similar to the xerophthalmia observed in Central Europe during the war and in famines in India as a result of deficiency in fat-soluble vitamin A. Local treatment has no effect, but rapid recovery follows, as in the case complicated by sloughing cutaneous ulcers mentioned above, when the patient is given a satisfactory diet.

Arthritis.—Multiple arthritis, very similar to that occurring in acute rheumatism, is a well-recognised complication of bacillary dysentery and it occurred in 4 per cent. of the Mayo Clinic cases of ulcerative colitis. I have only seen it once in about 100 cases of ulcerative colitis. It was accompanied by high fever and affected numerous joints for short periods, exactly as in acute rheumatism, though it did not respond to treatment with salicylates. The attack lasted about three weeks, leaving the joints without deformity and with perfect freedom of movement.

Circulatory and renal complications.—Suppurative pylephlebitis might be expected to be a common complication, but it has only been seen once in 1200 cases at the Mayo Clinic, and I know of no such case recorded in England. Mesenteric thrombosis occurred as a rare complication in the Mayo Clinic series, and I have seen one case with recurrent thrombo-phlebitis in the veins of the legs. Infective endocarditis is another rare complication.

Nephritis occurred in 1 per cent. of the Mayo Clinic cases. A woman of 35, who was admitted to New Lodge Clinic with very severe ulcerative colitis, was found to have severe *B. coli* pyelo-nephritis; at the end of three months, by which time she had completely recovered from the colitis, the urine was perfectly normal and was sterile on cultivation; she had been given 360 grains of alkali a day.

ARTHUR F. HURST, D.M., F.R.C.P.,
Senior Physician to Guy's Hospital.

SPECIAL ARTICLES

BRITISH MEDICAL ASSOCIATION

MEETING IN MELBOURNE

SECTION OF DISEASES OF CHILDREN

Dr. ROBERT HUTCHISON presided at this section when Dr. A. JEFFREYS WOOD and Dr. IAN WOOD (Melbourne) contributed jointly a paper on

Pink Disease

An excellent description of pink disease by Selter of Solingen, published in 1903, attracted little attention until Swift of Adelaide restated the syndrome in 1914. In a series of 200 cases in Australia, all were under 4 years of age. The pathology was indefinite, the nervous system showing variable and inconstant minor changes, probably no more extensive than was to be expected from a terminal infection. At present they preferred to maintain an open mind as to the site of attack of the noxious influence, and would rather visualise it as a toxin diffusely distributed throughout the body. The causation of pink disease was unknown, but several theories had been brought forward. Drs. Wood thought that the avitaminosis theory was inconclusive, on account of the relative frequency of the disease in Australia. This favoured rather the light-hypersensitivity theory of Braithwaite; but against this theory was the fact that cases of pink disease did better if nursed in the open air, and moreover an analysis of cases failed to show that the greatest number occurred at the season when the hours of sunshine are at a maximum. The infection theory was the most attractive. Although attempts to demonstrate the presence of organisms had been vain there was much indirect evidence in favour of a virus infection. Many cases started with a febrile attack, and often the disease seemed to have been contracted after contact with a victim. The fact that adults and children under one year were seldom affected could be explained if the virus was widely spread throughout the community in a mildly pathogenic state, giving the parent and young child an immunity. On rare occasions the organism would assume a pathogenic rôle in a highly susceptible individual, usually a child aged between 8 and 18 months. This would explain the infrequency of transmission by direct contact, and also the occurrence of sporadic cases in isolated parts of Australia. Dr. A. J. Wood outlined the symptomatology of pink disease, emphasising its prolonged and natural course. Up to the present no successful specific cure had been found. Symptomatic treatment, although it could not greatly alter the course of the disease, would lessen the discomfort of the sufferers, and alleviate the mental and physical stress of the parents. His own practice was to order light clothing with cotton, or preferably silk, next to the skin, and nursing in a perambulator or cot in the open air, with graded sun baths during the daytime and a tepid bath night and morning to the whole body, followed by gently rubbing with methylated spirits and application of dusting powder. If the fingers and toes showed irritation, equal parts of methylated spirits and tr. iodine applied as a paint would prevent onychia and at the same time lessen oral reinfection. Stomatitis was prevented by allowing the child to suck a wool and gauze swab soaked in 1 in 4 hydrogen peroxide. Younger children did well on a diet of unboiled cow's milk, those under two showing a great dislike for solid foods. Some older children seemed to enjoy raw vegetables and fruits. A mixture of bromides and chloral hydrate might be useful in insomnia. The mortality in treated cases would be less than 5 per cent. at home, but 30 per cent. in hospitals. This was due partly to the more severe cases admitted, but mainly to the risks of cross-infection, the patient succumbing to bronchopneumonia, gastro-enteritis, or cystitis. Drs. Wood

emphasised the importance of nursing cases of pink disease in healthy surroundings and out of hospitals.

The PRESIDENT said that Australia had the credit of being the country in which pink disease was first definitely established as an entity. He thought the disease was less common in England, only about 30 cases being admitted to Great Ormond-street in the last five years. There had, however, been local outbreaks in certain districts, notably in the neighbourhood of Birmingham. He was completely puzzled as to the cause of pink disease. There was very little evidence in favour of vitamin deficiency, and the infection theory was still very inconclusive. He drew attention to the resemblance between pellagra and pink disease, and thought that they might have a common cause. Atropine had been highly praised by some continental writers, but he thought it of no great value.

Dr. EDGAR STEPHEN (Sydney) gave a bad prognosis in the presence of much insomnia or excessive sweating. An additional diagnostic factor was a glassy appearance of the bones (resembling scurvy) and pencilling of the centres of ossification. Intranasal feeding might become necessary. He had seen one case of foot-drop as a sequela, and one of pellagra which he thought was due to deficiency following an initial attack of pink disease with starvation. In his experience the main cause of death was sudden heart failure.

Dr. S. F. MCDONALD (Brisbane) had seen pink disease in children of many different nationalities, but never in aborigines or half-castes. The disease had many points in common with poliomyelitis, but the infection was probably in the sympathetic system. He described a case of a man aged 31 who appeared to have contracted pink disease.

Dr. ROBERT SOUTHBY (Melbourne) also mentioned the close analogy between pink disease and poliomyelitis. He knew of one family in which three children had had pink disease; one child subsequently developing poliomyelitis and finally herpes zoster. He had treated cases of pink disease with pooled human serum, and considered that some had benefited. Although the blood calcium was normal, large doses of calcium improved the sweating and skin irritability. Treating pink disease usually meant treating the wrecked nervous systems of the parents.

Dr. F. N. LE MESSURIER (Adelaide) had seen three cases of pink disease following antral infection, and suggested upper respiratory infection as a focus.

Dr. A. P. DERHAM (Melbourne) had seen several cases with reddening of the tympanic membrane. Paracentesis did not relieve the symptoms and no pus was obtained.

Dr. F. KINGSLEY NORRIS (Melbourne) said that the parents should be told of the chronicity of the disease and reassured as to prognosis. One case of double foot-drop with peripheral neuritis had made complete recovery. Some colloidal silver preparation as an eye-drop was helpful in preventing secondary oral and nasal infection, and mercurochrome was less painful than iodine on the fingers.

Mr. P. L. HIPSLEY (Sydney) read a paper on

Intussusception

He reviewed 486 cases of intussusception occurring in one hospital over 14 years, treated by ten different surgeons. The surgeons who operated in all cases had a combined mortality of 14 per cent., while those using a preliminary injection of saline per rectum had a mortality of 9·8 per cent. In his own series of 210 cases the mortality was 6·6 per cent. In a series of 159 cases treated since 1918, 64 were reduced without operation, 32 were found reduced at operation, and 63 were unreduced. Injection had therefore reduced 60 per cent. The average duration of unreduced cases was 31 hours, as compared with 16 hours in those not requiring operation.

Many factors were concerned in intussusception. Anatomical features were: the disproportion between the diameters of the ileum and the cæcum, particularly at the age at which intussusceptions occur; the greater mobility of the ileocæcal regions in infancy; the failure of rotation of the mid-gut loop, that is, the stage of fixation of the mesentery, which was commoner in males; the increased number of Peyer's patches in the lower ileum. A physiological factor was the possibility of irregular peristalsis in the ileum due to its double nerve-supply—both sympathetic and parasympathetic. Several cases had begun immediately after a fall, an occurrence which might set up irregular peristalsis. Rare pathological causes might be enteritis, dietetic errors, and neoplasms. Heredity probably played a more important part than was generally realised.

Difficulties in diagnosis were presented when intussusception occurred in enteritis and Henoch's purpura; and sometimes the surgeon might be misled by the absence of blood in the stools. This could happen when the invaginated bowel acted as a plug in the ileocæcal sphincter. The projection of bowel from the anus was sometimes mistaken for a rectal prolapse. The absence of abdominal distension in the early stages made palpation easier and helped the surgeon to diagnose reduction after rectal injection.

Mr. Hipsley gave a detailed description of the hydrostatic pressure treatment used by him. Under general anæsthetic, saline was run into the rectum from a glass container, 3 ft. 6 in. above table level, for from 3 to 4 minutes—the buttocks being pinched together to prevent fluid escape. The catheter was disconnected and the saline returned to a bed-pan. A second and then a third injection were given, the whole process taking about 10 minutes. The first return usually contained blood, the second was clearer and might contain some specks of fæcal material, and the third showed more fæces and perhaps flatus—both facts indicating a probable reduction. The actual diagnosis of reduction depended on the distension of the abdomen by the saline passing into the small intestine—the circumference at the umbilicus increasing 1½ to 2 in. Sometimes saline exuded from the mouth. If reduction occurred, but no saline passed, it was impossible to distinguish between thickened mucosa and unreduced intussusception. A small grid-iron incision was then made to verify the fact of reduction. If no operation was done, a teaspoonful of charcoal was put into the stomach by a catheter. Most of this should be recoverable five hours later by an enema. Disadvantages of the method were the possibility of (1) rupturing the intestine—this had occurred only once in 300 injections, where a small intestinal ulcer had perforated, manual pressure having been used on the abdomen—and (2) getting a false impression of reduction. In Mr. Hipsley's 64 unoperated cases this had never occurred. The advantages were that 40 per cent. of cases could be cured without operation, and nearly all cases were at least partially reduced—a grid-iron incision enabling the surgeon to complete the process. In conclusion, Mr. Hipsley recommended operation when there was no definite proof of reduction, when a partially reduced intussusception

could be felt, in recurrent cases, in a long-standing case when it was impossible to feel the tumour either before or after treatment, and in subacute and chronic cases in older children.

Dr. W. VICKERS (Sydney) said that the low mortality indicated that Mr. Hipsley's technique was good, but a less experienced surgeon might have some difficulty in being sure reduction was complete. The increased duration of anæsthesia was justified.

Dr. H. C. COLVILLE (Melbourne) considered inflamed Peyer's patches could cause spasm and initiate an intussusception, and the breast milk of late lactation might contain some irritant to lymphoid tissue.

Dr. R. DOWNES (Melbourne) had found that if a bowel resection was necessary, much less shock resulted if this was done extra-abdominally—the abdomen being temporarily closed with through-and-through silkworm-gut sutures.

Mr. F. C. PYBUS (Newcastle) was impressed by the method and intended to try it. He thought that an œdematous patch in the bowel might initiate an intussusception, and he knew of a case where a woman suffering from angioneurotic œdema had two children who developed an intussusception.

Mr. HIPSLEY, in reply, said that the main disadvantage of extra-abdominal manipulation of an intussusception was the difficulty in telling when reduction was complete. The saline in the bowel did not tend to cause breakdown of the wound, because the partial reduction usually enabled a grid-iron incision to be used.

SECTION OF RADIOLOGY AND RADIOTHERAPEUTICS

Dr. R. A. GARDNER (Cairo) presided at a meeting of this section when Dr. J. G. EDWARDS (Sydney) opened a discussion on

Radiographic Diagnosis in Diseases of the Lungs

Nowadays, he said, no chest investigation could be considered complete without a radiographic examination carried out by a specially trained medical expert; the physician who attempted to interpret his own films would not be getting full value from the method. Physician and radiologist should make their individual examinations and then meet to correlate their findings. Fluoroscopic examination should be reduced to a minimum, being only of value in demonstrating diaphragm movements, in localising abscess or hydatid, and in the control of lipiodol instillations. He personally was in favour of the use of stereoscopic postero-anterior films for routine work, taken at 7 feet distance using 300 m.a. at 70 kv. with an exposure of about 1/30 second. Dr. Edwards said he would confine his remarks to a few conditions.

Apical Scars.—These, he said, were dense shadows at the extreme apices, common in working men, and looked upon as healed tuberculous lesions. They never appeared to break down, and if the person should develop tuberculosis it never seemed to be associated with the scarred area.

Effusions.—Atypical effusions might cause difficulty in interpretation. Interlobar effusions followed the interlobe and might assume various shapes. Some were triangular in outline and lateral films were then of value. Mesial effusions were rare, and when they occurred were usually associated with an œsophageal lesion.

Bronchiectasis.—This condition could usually be demonstrated in stereoscopic films, although it might be overlooked if situated behind the heart or deep in the costophrenic sulci. Lipiodol instillation should only occasionally be called for and then the supraglottic route should be chosen. The amount of lipiodol should be as small as possible, otherwise a portion of lung might be "drowned."

Fibrin Bodies.—These were rounded shadows on one side of a chest which had been the site of a hydropneumothorax. On coagulation of fluid ball-like structures of varying sizes were formed which gradually disappeared after the lung had become fully expanded.

Fungus infections were rare. The only ones seen by Dr. Edwards were due to yeast or to actinomycotic infections. The former had showed a bilateral fuzziness with scattered areas of broncho-pneumonic consolidation; diagnosis was not made before death. In actinomycosis the lesion was at first localised to one lobe, later spreading in all directions. In many cases a "vesicular" appearance was typical.

Silicosis.—In conjunction with his brother Dr. Edwards had carried out extensive investigations into silicosis for the N.S.W. Government; they had found changes occurring in the lungs of rock-choppers, coal-miners, cement workers, asbestos workers, and tool grinders, the inhaled dust being dangerous in proportion to its silica content. Most authorities agreed that silicates produced no nodular fibrosis, but one silicate (that of aluminium and potassium) known as sericite had been put forward as a cause. The general opinion, however, was that it could not produce these changes by itself but that when present it hastened the action of silica in producing fibrosis. Hawkesbury (N.S.W.) sandstone contained free silica (80 per cent.), metalliferous ores (20 per cent. to 60 per cent.), and coal (2 per cent.). Coal-miners, however, frequently cut through seams of rock, and moreover sandstone dusting was used in some mines to carry down the fine coal dust which was liable to cause explosions. In this way the analyses of dusts as supplied might be misleading. Individual susceptibility might also play a part in silicosis; some men after 40 or 50 years of sandstone mining were unaffected, while others showed changes after 6 or 8 years. With a high silica content in the dust the onset of the disease was more rapid, and in lungs with damaged lymphatic circulation, whether due to tuberculosis or chronic bronchitis, the condition developed more rapidly. From other parts of the world cases of silicosis were reported after only a few years' work; this might be due to the greater prevalence of catarrhal conditions with consequent damaged lymphatic circulation and to less healthy conditions of employment abroad. The silica nodule was similar to the tuberculous nodule but never went on to caseation. The nodular fibrosis of silicosis was bilateral and spread from the hilum on each side, being somewhat more advanced on the right side. Once established the condition continued to advance even if the man was removed from his dusty occupation. The extent of the condition as shown in the film could not be taken as a guide to the worker's disability. Early stages of fibrosis might be associated with grave disability, while men with a most advanced fibrosis might show no disability.

Dr. J. O'SULLIVAN (Melbourne) stressed the importance of consultations between the physician and the radiologist. With regard to technique there were two schools of thought in Melbourne—one favouring the fixed or moving grid, the other discarding any diaphragm. He himself now used a fixed grid (Lysholm) with hard rays. Stephani (Switzerland)

also used this grid with voltages up to 150 kv. For lipiodol injections he used the method of instillation through a catheter after anæsthetising the pharynx, while controlling the injection by observation on the fluorescent screen so that the oil could be directed to the required area. He quoted a case in which a small ulcer was observed on the screen but could not be identified in the films. This small ulcer proved to be an early carcinoma. Dr. O'Sullivan then showed a series of slides made from X ray films to illustrate his remarks.

Dr. BURNETT CLARKE (Brisbane) did not favour fluoroscopic examination of lungs. Some physicians who brought their patients for examination seemed to forget that at least ten minutes in a dark-room was required for accommodation of vision before screening. A full clinical examination should be made before a patient was referred for X ray examination.

Dr. A. J. COLLINS (Sydney) said that in pulmonary tuberculosis it was difficult to decide when the lesion was healed. He quoted the case of a woman who after spontaneous pneumothorax had no demonstrable lesion but three years later had a small calcified area which had remained unchanged. This patient had since had several children without recrudescence. Another patient showed no demonstrable lesion one year after a spontaneous pneumothorax but four years later had developed calcification at the apex of one lung and tubercle bacilli in the sputum. A year later further calcification had taken place.

Dr. F. GWYNNE (Auckland, N.Z.) said that in New Zealand silica and sericite occurred in varying proportions in dust from mines. One district had a high silica content but a low incidence in silicosis, and at present the reason for this was obscure.

Dr. C. BADHAM (Sydney) said that the pathology of dust diseases was at present on a poor footing. He had been conducting animal experiments to reproduce working conditions, and although his guinea-pigs showed gross macroscopic lesions following the inhalation of quartz dust he had not yet succeeded in proving that the sericite content bore a direct relationship to the extent of the lesions.

Dr. H. R. SEAR (Sydney) submitted some notes on

Diagnosis of Bone Tumours

Early differentiation of the type of tumour was of great importance from the aspect of treatment. All available information, such as the history and the results of any pathological examinations, should be made available to the radiologist. A much more extensive X ray examination might be required than had been requested. For example, in a child referred for X ray examination the skull appeared to be normal but secondary neuroblastomata were observed in the femora. A typical history was obtained and the red cell count was found to be 2,670,000. A hopeless prognosis was given. The child was then taken to another physician and referred to another radiologist; the latter was only asked to X ray the skull which showed no abnormality. Two months later the child died. Again, a man referred for examination of a swollen and inflamed finger was diagnosed as having osteomyelitis. Six weeks later the patient died in another hospital with metastases from a Ewing's tumour. On re-examination of the original films with a magnifying glass there was a suggestion of a fine periosteal deposit arranged at right angles to the shaft.

Dr. Sear discussed bone tumours in four groups according to the part of the bone mainly involved—that is, showing changes (*a*) mainly periosteal; (*b*) mainly cortical; (*c*) mainly central; (*d*) composite changes. In connexion with group (*a*) he discussed secondaries from primary bronchogenic carcinoma, extraperiosteal fibrosarcoma, secondary neuroblastoma, and the lacework type of specific periostitis. In group (*b*) the conditions causing most difficulty in diagnosis were hydatid, lymphadenoma, and certain metastases, such as hypernephroma. In group (*c*) showing central involvement there were four main lesions likely to cause errors in diagnosis: (1) hydatid (central type); (2) lipoid histiocytosis, the general massive type, also the changes described by Schuller in the skull and by Gaucher in the long bones—either one or both combined; (3) central cartilaginous masses (allied to Ollier's disease but not a true Ollier's disease); (4) secondary hypernephromata. The composite group, said Dr. Sear, was more complex, according to the following Table:—

Lesion.	Lesion to be excluded.
1. Ewing's tumour ..	(*a*) Osteomyelitis; (*b*) syphilis; (*c*) tuberculosis; (*d*) Garré's sclerosing non-suppurative osteomyelitis; (*e*) Engelmann's disease.
2. Paget's disease ..	(*a*) Supervention of sarcoma on same; (*b*) prostatic secondaries; (*c*) "ivory" vertebræ.
3. Lipoid hystiocytosis (Gaucher's with massive destruction).	(*a*) Tuberculosis; (*b*) metastases.
4. Secondary neuroblastoma	(*a*) Osteomyelitis; (*b*) chloroma.

Dr. Sear showed numerous slides of X ray films to illustrate these conditions. He also drew attention to the comparative rarity of the supervention of sarcoma upon Paget's disease in Australia. In America 14 per cent. of cases of Paget's disease were reported to have developed sarcoma, in Germany 5 per cent., while his own figures only showed 2 per cent.

Dr. V. MCDOWELL (Brisbane) stressed the importance of obtaining full clinical notes of cases, and pointed out that in some conditions a definite diagnosis could only be arrived at after observing the reaction of the tumour to deep therapy—e.g., Ewing's tumour. He considered that a comprehensive classification of bone tumours was needed to avoid the present confusion in nomenclature. He agreed that the incidence of sarcoma supervening on Paget's disease was not nearly so common in Queensland as it appeared to be abroad.

Dr. COLIN MACDONALD (Melbourne) agreed with Dr. Sear that it was the secondary deposit confined to one bone which caused mistakes in diagnosis. Such unusual bone changes were more frequently due to secondary carcinoma than to primary sarcoma. Most bone tumours were epiblastic in origin, although they were formerly considered to be mesoblastic. With regard to Ewing's tumour he said that at the Children's Hospital, Melbourne, during the last ten years he had only seen one completely proven case.

Dr. HOWARD PRAAGST (Melbourne) said that in his experience Ewing's tumour occurred most commonly in adults in the ribs. When it occurred in the long bones he found that the proportion in the tibiæ to the tarsal bones was 15:1. Hydatid of bone was very rare in Australia, especially when compared with the frequency of hydatid cysts occurring in other parts of the body; in the last ten years only nine cases of bone hydatid had been seen at the Royal Melbourne Hospital. Dr. Praagst referred also to the frequency with which negative Casoni and complement-fixation tests were obtained in the presence of proven hydatid disease.

MEDICINE IN THE COLONIES

THE work of the Government medical services in the various parts of the British Commonwealth is of fundamental importance, and we are glad to see once more a supplement to the *Tropical Diseases Bulletin* which summarises in a single volume [1] the information contained in the various annual medical and sanitary reports from British colonies, protectorates, and dependencies. This supplement, the fifth of its kind, is fuller than previous issues, and contains an account of the activities of 55 medical services. The summaries follow the same general arrangement as before, giving for each colony the year's record of vital statistics, maternity and child welfare work, school hygiene, general sanitation, housing, and town-planning, followed by particulars of the incidence of the more important diseases and the measures taken locally to combat them. New features are the addition of short prefatory notes on the geographical positions and areas of the colonies concerned, and of a useful index of names and subjects.

MALARIA

Of the major tropical diseases malaria presents the most urgent problem. Control measures suited to one region may prove quite unsuitable in other localities where circumstances and conditions are different. This difficulty is well illustrated by the experience in the Windward Islands where certain parts are mainly infested by anopheles breeding in the ravines, which are numerous. In times of heavy rain the larvæ are washed out to sea and the malaria incidence falls; in dry weather pools are left in the ravines and breeding goes on unimpeded. In the flat cane lands in the river valleys however quite the reverse holds good; here the greater the rainfall the higher the incidence. A different problem is present in Trinidad, where brackish water swamps are well-recognised zones of high endemicity. Here it was found that if sea-water was admitted to maintain the salinity at about 80 per cent. of "equatorial sea-water," breeding of anopheles ceased. The sanitary engineer therefore carried out work to replace the stagnant brackish water by moving sea-water in parts where reclamation by filling was impracticable; he notes however that wherever practicable the latter is the best method of eradicating anopheles breeding.

Antimalarial oils for use in anopheles control have been investigated in Kenya. Tests on oil fractions ("cracked" oil) indicate that the important larvicidal properties depend upon the presence of certain quantities and qualities of residue produced by distillation above 270° C. Borneo fuel oil appears to be slightly superior to Persian, and as a good spreader a mixture of Borneo fuel 10 parts and Solar oil 1 part is recommended in dosages of 18 to 20 gallons per acre at intervals of 7–8 days.

The question of the use of drugs other than quinine in malaria treatment and as a prophylactic in malarious centres has also been investigated. In the Federated Malay States Dr. R. T. B. Green has tested Atebrin to determine the advisability of substituting it for quinine in the treatment of malaria on rubber estates among ambulatory outdoor patients. He concludes that "atebrin possesses the advantage that it can be given in a daily curative dose at one muster and is willingly taken by the labourers without fear of cinchonism." For ordinary general treatment however he sees no special advantage in its use in place of quinine. Dr. Green also tested totaquina which he found to be slightly less efficient than quinine in the immediate treatment of acute malaria. In Hong-Kong Quinoplasmoquine has been tried in place of quinine as a prophylactic in one of the New Territories police stations at Tsun Wan. During the half year of trial no case of malaria was admitted to hospital from this station, although of eight men who were transferred from it, and therefore ceased to take the drug, three subsequently went down with malaria.

SOMIASES

Work on trypanosomiasis has been carried on in most of the African Colonies. Preventive measures have mainly taken the form of mass treatment of the people and localised protective undertakings against the tsetse-fly. In East Africa control measures have been agreed upon by the governments of Tanganyika Territory and the Uganda Protectorate to prevent natives infected with *Trypanosoma rhodesiense* in Tanganyika from crossing over to Uganda. In Nyasaland the medical entomologist Dr. W. A. Lamborn has continued his investigations into the possibilities of vectors other than tsetse acting as transmitters of trypanosomes. His experiments with *Bdellolarynx latifrons* show that these flies are sufficiently long-lived for the development of trypanosomes within them and that their blood-feeding voracity adds immensely to their potentialities as carriers of disease-producing organisms.

Turning to diseases due to helminths, schistosomiasis is said to have been almost unknown in Bechuanaland before 1932, but in 1933 there was a widespread infestation among the tribal schoolchildren at Mochudi, 101 children having contracted infection from residual pools in the Marico and Notwani rivers, the snails not having been washed away as usual because of a serious drought. By way of prevention, heglig berries (*Balanites ægyptiaca*), which abound in the endemic areas in the Sudan, have been found by Archibald to be lethal to the cyclops, the schistosome-carrying mollusc, without interfering with the potability of the water. In view of this observation these trees have now been planted round a village pond near Katsina in Nigeria and experiments are to be made there to test their efficacy in that part of Africa. Interesting and important research on schistosomiasis has been carried out by Dr. A. R. D. Adams in Mauritius where the intermediate molluscs have hitherto evaded discovery. Dr. Adams has shown that, under conditions resembling those present in nature in irrigation canals in Mauritius, *Bulinus forskali* thrived and became heavily infested with bifid-tailed cercariæ, while none of the other species employed as controls were attacked. The evidence implicating this particular mollusc as carrier in Mauritius is therefore very strong.

The ophthalmic report from the Sudan contains an interesting account of investigations on "Sudan blindness" by Dr. Joseph Bryant who finds that this condition is a localised disease associated with people who live along rocky streams. Where "Sudan blindness" has been found there also *Onchocerca volvulus* has been found; but Dr. Bryant regards

[1] Tropical Diseases Bulletin, 1935, vol. xxxii. Supp. Medical and Sanitary Reports from British Colonies, Protectorates, and Dependencies for the Year 1933, summarised by H. Harold Scott, M.D., F.R.C.P., D.P.H., Director of the Bureau of Hygiene and Tropical Diseases. Pp. 280. 7*s*. 6*d*.

"Sudan blindness" and onchocerciasis as distinct entities with similar distribution, for in the former the condition is bilateral and night blindness is a constant symptom, whereas onchocercal keratitis is occasionally unilateral and in its early stages vision is better in poor light than in sunshine.

The supplement is full of meat; we have only been able to sample it, picking out an item here and there of special interest. The summary of vital statistics—birth, death, and infant mortality-rates—for each of the colonies, with the corresponding figures for the previous year, records progress and the whole provides a ready reference to the activities of the medical services under British rule. For the members of the Colonial Medical Service, past, present, and future, it is an indispensable handbook.

MEDICINE AND THE LAW

The Practitioner's Right to His Own Name

THE *British Medical Journal* has lately published several interesting letters on the grievance of practitioners whose names are used by manufacturing chemists. The correspondence began with a letter from Dr. Hugh MacLean. Some years ago he described in the medical press his method of treating certain gastric lesions by means of alkalis and he gave the formula of a powder which he had found efficacious in cases of gastric ulcer. He can fairly claim to have followed the best professional tradition in having made his conclusions and his experience available to all practitioners to be tested or used in the common interest. He had justifiable ground for annoyance when firms of manufacturing chemists made up and marketed a powder and took liberties with his name in advertising their wares. At his instance the B.M.A. made representations. Some firms abandoned the use of his name; others took no notice. His recent letter complains that one firm, Macleans Ltd., has lately issued a prospectus wherein it claims proprietary rights in the "Maclean Brand Stomach Powder"; the firm, he says, adopted this name for the powder after strong protests on his behalf had induced it to cease describing the powder as made up "according to the formula of Professor Hugh MacLean." He contends that members of the public will inevitably draw the entirely false inference that he is in some way financially interested in the manufacture and sale of the powder. He has apparently been advised that he has no legal remedy for his annoyance except a possible action for libel which, whatever its outcome, would involve him in expense, loss of time, and undesired publicity. He asks if it would not be possible to introduce legislation to prevent the exploitation by unscrupulous persons of a prescription published in the medical journals. As he observes, the widespread sale of a remedy prescribed for use in certain conditions may do harm if used in other conditions, and in any case it is grossly unfair that a similarity of name should enable a firm to claim some special virtue in the art of dispensing the powder whereof he published the formula. Other practitioners, it seems, have suffered similarly by the unauthorised association of their names with druggists' preparations. Has a professional man, they ask, no right to restrict the use of his name?

It is a great pity that the case of Dockrell *v.* Dougall went the wrong way in 1899. The vendors of a liquid named "Sallyco" advertised that Dr. Morgan Dockrell was prescribing Sallyco as an habitual drink; "Dr. Dockrell," added the advertisement, "says nothing has done his gout so much good." Unfortunately the jury found that the words were not a libel. The plaintiff failed to obtain any finding that the words were likely to injure him in his profession, although it seems clear that the jury might have held that they suggested that he had violated professional ethics by lending his name to puff a remedy in which he had an interest. Dr. Dockrell then had to argue that he had a property in his name *per se*. Here the Courts were definitely against him. "If it could be made out," said Lord Justice Smith, "that a man has a property in his own name *per se*, and there has been an unauthorised use of his name, the plaintiff might be entitled to an injunction; in order, however, to be entitled to an injunction, it seems to me that the plaintiff must show injury to himself in his property, business or profession." If the case of Dockrell *v.* Dougall went the wrong way, the more recent case of Tolley *v.* Fry holds out some better hope. Mr. Tolley, a noted amateur golfer, was stupidly caricatured on the advertisement of a brand of chocolate. He obtained damages for libel on the ground that this use of his name reflected upon his amateur status, since it implied that he had, for reward, allowed his portrait to be used for advertising purposes and had thus prostituted his reputation as an amateur. In the House of Lords Lord Hailsham thought it would be open to a jury to assume that no reputable firm of chocolate-makers would have the effrontery and bad taste to take the name and reputation of a well-known man for an advertisement commending their goods without first obtaining his consent. Mr. Tolley held his verdict and the analogy might serve to secure a verdict for a medical practitioner whose name has been abused in circumstances which suggest that he has broken the ethical rules of his profession. Dr. Hugh MacLean's particular annoyance is the use of his name by a commercial firm of a similar name. Need he allege fraud if he seeks a legal remedy? Can he show that the firm's conduct is calculated to deceive? Or will the court pessimistically reply, as Lord Loreburn did in the Dunlop litigation in 1907, "I cannot speculate on the degree of unwariness which would induce the confusion necessary to support the appellants' case"? At the common law, according to Jessel, M.R., in Merchant Banking Co. of London *v.* Merchants' Joint Stock Bank (1878), anybody might use his own name for the purpose of trade, or he might trade under any fancy name he chose, "and the mere fact of somebody else having the same name and carrying on trade under that name does not prevent another from doing the same." In Turton *v.* Turten (1889) Lord Justice Cotton, after citing those words, added that "when a man knows that the natural consequences of what he is doing is to represent his goods as the goods of somebody else, then it is wrong on his part to continue that act." Presumably Dr. MacLean's main difficulty is that he is not a rival trader of Macleans Ltd. The Companies Act prohibits a company from being registered by a name which is identical with that of an already registered company or which so nearly resembles that name as to be calculated to deceive. A company, it has been decided, has not the same freedom to trade under a name already identified with an existing business as an individual might have. But unfortunately a medical practitioner has not the same rights as a

trading firm might have if he takes legal action to protect the use of his name.

Somehow it has happened that the law is ready to defend rights of privacy with alacrity where a plaintiff's property is concerned, but will give little help against interference with the personal seclusion of the plaintiff himself. Thirty years ago in Corelli *v.* Wall Miss Marie Corelli sought an injunction to restrain the defendant from selling (without her authority) coloured post cards containing indifferent portraits of her in imaginary incidents of her life. The court gave her no remedy either for libel or for the unauthorised publication of a bad portrait of herself. In Tolley *v.* Fry Lord Justice Greer had no doubt that the defendants, in publishing their advertisement without first obtaining Mr. Tolley's consent, were guilty of an act for which there ought to be a legal remedy. We can apply these words with emphasis to the act of which Dr. MacLean complains. There is probably a widespread feeling that the invasion of personal privacy requires to be checked. Public personages, politicians, and others may have to suffer the publicity which they sometimes move half-way to meet; the professional man, if he has no such ambitions, should have a right to his own name.

Fine for Unlawful Description as "Manipulative Surgeon"

The Paignton magistrates dealt on Nov. 15th with the case of Captain Horace Barrow which had been sent back to them by the Divisional Court (see THE LANCET, Nov. 2nd, 1935, p. 1023) with a direction to convict. They imposed a fine of £10 with an order to pay £10 10*s.* costs. In announcing the decision, the chairman of the bench remarked that their former decision had been reached by a majority and was contrary to advice tendered to them by the clerk to the justices. The magistrates, it may be recalled, had originally refused to convict and had awarded Captain Barrow a substantial sum for costs. This award the Divisional Court annulled.

MEDICAL MEN IN PARLIAMENT

WE miss some familiar faces from our Parliamentary gallery and there are no new ones. In two constituencies medical candidates were opposing one another: at Bury neither was successful; at Reading Dr. Howitt's success, which we all welcome, unfortunately means the defeat of Mr. Somerville Hastings, whose chairmanship of the chief health committee of London would in itself have qualified him for a place in the deliberative assembly. Many besides doctors will regret Dr. Addison's absence from the new House, and we offer sincere condolence to Dr. O'Donovan and to Sir John Worthington on their defeat at Stepney and the Forest of Dean. A number of men and women in active general practice put up plucky fights, but there are very few general practitioners among those who retain their seats. It looks as though Parliamentary life under existing conditions is not available for the practising doctor, however much it may be for the practising lawyer. Those who will represent medicine in the new Parliament cover all political parties and will continue to meet as a medical parliamentary committee under the chairmanship of Dr. Howitt.

ANALYSIS OF VOTING

The list of medical candidates here given shows the individual position at the poll and the number of votes registered. The sign † indicates membership of the last House of Commons, ‡ membership of a previous Parliament, and * that the candidate has contested this or some other seat before.

Constituency.	Name.	Position at poll.	Votes registered.
Universities.			
London	Sir Ernest Graham-Little†	1	(1) Nat. Ind., 8,958 (2) Lab., 3,918
Queen's, Belfast..	Prof. T. Sinclair†		C., Unopposed.
London Boroughs.			
Bermondsey (West)	Dr. Alfred Salter†	1	(1) Lab., 12,603 (2) L.Nat., 7,674
Camberwell (Dulwich)	Dr. C. R. Cooke-Taylor*	3	(1) C., 16,870 (2) Lab., 7,142 (3) L., 3,743
Hammersmith (South)	Dr. J. D. Cooke†	1	(1) C., 15,377 (2) Lab., 9,309
Paddington (North)	Dr. G. de Swietochowski	3	(1) C., 17,153 (2) Lab., 9,925 (3) L., 1,795
St. Marylebone ..	Dr. Elizabeth Jacobs	2	(1) C., 31,183 (2) Lab., 8,008
St. Pancras (South-East)	Dr. S. W. Jeger	2	(1) C., 11,976 (2) Lab., 10,340 (3) L., 1,181
Stepney (Mile End)	Dr. W. J. O'Donovan†	2	(1) Lab., 13,177 (2) C., 9,859
Wandsworth (Central)	Sir Henry Jackson†	1	(1) C., 14,728 (2) Lab., 10,405
English Boroughs.			
Bury ..	Dr. Edith Summerskill	2	(1) C., 18,425 (2) Lab., 12,845
	Dr. D. McIntosh Johnson	3	(3) L., 6,065
Manchester (Rusholme)	Dr. Percy McDougall*	3	(1) C., 19,678 (2) Lab., 9,258 (3) Ind., 2,525
Newcastle-on-Tyne (West)	Mr. J. W. Leech†	1	(1) C., 25,526 (2) Lab., 17,052
Preston (2 seats)	Dr. R. A. Lyster*	3	(1) C., 37,219 (2) C., 36,797 (3) Lab., 32,225 (4) Lab., 31,827
Reading ..	Dr. A. B. Howitt†	1	(1) C., 27,540
	Mr. Somerville Hastings‡	2	(2) Lab., 22,949 (3) L., 2,685
Smethwick ..	Dr. C. W. Brook*	2	(1) C., 16,575 (2) Lab., 15,023
Tynemouth ..	Dr. S. Segal	2	(1) C., 16,003 (2) Lab., 10,145 (3) L., 7,868
English Counties.			
Gloucester (Forest of Dean)	Sir John Worthington†	2	(1) Lab., 16,768 (2) Nat. Lab., 12,337
Herts (St. Albans)	Sir Francis Fremantle†	1	(1) C., 33,743 (2) Lab., 16,233
Lincoln (Horncastle)	Dr. H. C. Haslam†	1	(1) C., 17,594 (2) Lab., 7,982
Wilts (Swindon)	Rt. Hon. C. Addison†	2	(1) C., 20,732 (2) Lab., 19,757
Welsh Counties.			
Brecon and Radnor	Dr. L. Haden Guest‡	2	(1) Nat. Ind., 22,079 (2) Lab., 19,910
Carmarthen (Llanelly)	Dr. J. H. Williams†		Lab., Unopposed
Denbigh (Denbigh)	Dr. J. H. Morris-Jones†	1	(1) L. Nat., 17,372 (2) L., 12,329 (3) Lab., 4,963
Scottish Burghs.			
Edinburgh (Central)	Dr. R. A. Barlow	3	(1) C., 12,612 (2) Lab., 9,659 (3) L., 1,086
Glasgow (Kelvingrove)	Rt. Hon. Walter E. Elliot†	1	(1) C., 15,100 (2) Lab., 14,951 (3) L., 1,004
Scottish Counties.			
Aberdeen and Kincardine (Central)	Dr. W. S. Russell Thomas*	3	(1) C., 14,697 (2) Lab., 6,128 (3) L., 5,873

C.=Conservative. Ind.=Independent. L.=Liberal. L. Nat. =Liberal National. Lab.=Labour. Nat. Lab.=National Labour. Nat. Ind.=National Independent.

Acknowledgments of photographs are due to—*Vandyk* (Dr. Cooke); *A. W. Sargent* (Dr. Howitt); *Bassano* (Rt. Hon. W. E. Elliot); *Philipson & Son* (Dr. Leech); *Alfred Haley* (Dr. Morris-Jones); *Allison* (Prof. Sinclair).

DR. J. D. COOKE

MR. WALTER ELLIOT

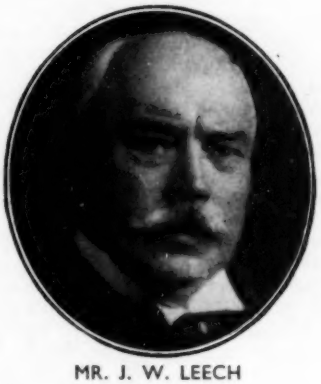
SIR FRANCIS FREMANTLE

SIR ERNEST GRAHAM-LITTLE

DR. H. C. HASLAM

DR. A. B. HOWITT

SIR HENRY JACKSON



MR. J. W. LEECH

DR. J. H. MORRIS-JONES

DR. ALFRED SALTER

PROF. THOS. SINCLAIR

DR. J. H. WILLIAMS

IRELAND

(FROM OUR OWN CORRESPONDENT)

PROPOSED PENSION SCHEME FOR NURSES

A BILL to establish a scheme of pensions for nurses and midwives was introduced to the Senate of the Irish Free State last week by Senator Dowdall, with the backing of Senator Sir Edward Coey Bigger among others. The Bill provides that a Pensions Endowment Trust is to be established by a sum of £250,000 out of the sums in the hands of the National Hospital Trustees which have accrued from the Hospitals Sweepstakes. Every nurse and midwife is to contribute 6*d*. a week toward a Nurses' Pensions Fund, and every hospital is to contribute 6*d*. a week to the same Fund in respect of every probationer nurse in training. To this fund will go also all interests, dividends, and income arising from the investment of the Pensions Endowment Trust. A nurse is defined as "a woman who has adopted nursing as her sole mode of livelihood and who is registered by the General Nursing Council of Saorstát Eireann," and a midwife as "a person who carries on no other occupation than that of midwife and who is certified by the Central Midwives Board of Saorstát Eireann." A period or periods in the aggregate of twenty years' work as a nurse or midwife is necessary for qualification for a pension, and the pension will begin when the nurse or midwife resigns her occupation. The amount of the pension will be £30 a year, or such greater sum as the Minister may from time to time determine.

Unfortunately it is the fact that it is more difficult for nurses to make adequate provision for old age than it is for other working women. In the first place the working life is shorter. A nurse at fifty or over, unless she has been fortunate enough to get into some permanent service, is likely to find herself both unemployed and unemployable. Again, despite the importance of their work to the community and the trying conditions in which much of their work is done, nurses are, in comparison with other working women, much underpaid. Hitherto the various charitable funds which have been got together to assist nurses in financial difficulty, while they have helped individual cases, have probably tended to perpetuate the practice of under-payment. It is doubtful whether a provision of pensions by such a scheme as is put forward in Senator Dowdall's Bill would not, in the event, do more damage than good to the interests of the nurses themselves by postponing the establishment of the work of nursing on such a financial basis as would enable nurses, like other skilled workers, to make provision for the time of their retirement. It is anomalous to set up a public scheme of pensions for one class of workers while other workers whose services are equally essential to the community have no such provision made for them. If such a scheme is to be set up it would seem fairer to endow it from public funds rather than from funds accumulated by the voluntary hospitals for the treatment of the sick. Already there have been too many inroads on the Sweepstakes Funds for purposes foreign to their original purpose. It is often forgotten that the sweepstakes were promoted and established by the authorities of the voluntary hospitals to provide funds for those hospitals. The Government contributed nothing, and in fact takes 25 per cent. of the proceeds in return for giving permission to promote the sweepstakes. In recent years it has also made the previously rate-supported institutions parasitic on the scheme so far as building and improvements are concerned. There does not seem to be any justification for making other extraneous objects dependent on the Sweepstakes Funds.

BUCKSTON BROWNE DINNER

ROYAL COLLEGE OF SURGEONS OF ENGLAND

OF the two speakers at the Buckston Browne dinner at the Royal College of Surgeons on Nov. 14th the first was the president, Sir CUTHBERT WALLACE. The greatest event of the College year, he said, had been Sir Holburt Waring's journey to Australia to open the new buildings of the Royal Australasian College of Surgeons. Examiners for the primary fellowship had also travelled far afield, and 35 of 68 candidates had passed this examination last December in Australia and New Zealand, while 21 out of 60 had passed in Madras. This winter it was hoped to hold another examination in India. At home, with the Royal College of Physicians, diplomas had been instituted in anæsthetics and child welfare. Another memorable feature of the year had been the fate of the Osteopaths Bill in the House of Lords—a fate largely attributable, he thought, to the efforts of the College and especially of Mr. Elmslie, Mr. Souttar, and Dr. Graham-Hodgson. After speaking of the lecture and scholarship founded in memory of Sir Robert Jones, and of arrangements by which annual scientific meetings are to be held jointly by British and French surgeons alternately in France and this country, the president turned to changes in the College staff, including the appointment of Mr. A. J. E. Cave as assistant conservator of the museum and of Mr. L. W. Proger as pathological curator. He expressed, amid applause, the thanks of the College to Mr. T. W. P. Lawrence who retired from his post as acting pathological curator last March. The maintenance of the museum and of research were two of the main tasks of the College, he continued, and for the museum new specimens were urgently wanted: at present only about 150 specimens were received each year. In the department of research investigations on shock were being made which had been quoted far and wide; and—an encouraging sign—Dr. Beattie, the conservator, was getting applications for bench space from men overseas. Also one of the Beit fellows had been sent to work at the College. The laboratories on the top floor could and should be made perfect, and this could be done, with suitable endowment, at a cost of a mere £100,000. Meanwhile the research farm at Downe had proved of inestimable value.

Sir BUCKSTON BROWNE, when his health had been drunk, expressed his pleasure at seeing his guests. Medicine, he felt, was gradually coming into its own as the highest of professions—the highest because it is concerned with the human body from which all human activities spring. The nineteenth century must go down as the most important of all in the history of man because it brought a sense of the importance of the body. The world would never again be as it was in 1859 when the "Origin of Species" appeared: "man realised what he was, where he came from, and that he had prospects before him." The College of Surgeons had a fine tradition in biology, and the work of Hunter and Jenner had been continued by Arthur Keith. But formerly presidents and councils did not take much interest in this side of its work, and it was not until ten years ago that money was voted and rooms arranged for the more elaborate forms of biological research. It was then that those in charge began to long for the more spacious days of John Hunter when within two or three miles of Lincoln's Inn-fields, in lovely country, a farm could be found where experimental animals could be kept in healthy surroundings. This was where he had been able to

help. "The College," said Sir Buckston, "is a stern mistress. But at last she took me to her bosom, and although we were both of mature age the union has been fruitful and a strong and lusty child has been born." Already splendid work had been done at the research farm at Downe under the control of the president and council, the conservator, and the resident master, Sir Arthur Keith. He begged his hearers to go to the farm, see for themselves, and do their best to encourage public support for scientific research rather than for magic and superstition.

At the end of the dinner the president announced that those present included the "youngest member of the College," admitted that afternoon. This was Mr. Ernest Theophilus Roberts, M.D. Edin., 1889, who had attempted the Conjoint examination in 1886 but had only succeeded in passing in midwifery and medicine. During retirement Dr. Roberts had employed some of his leisure in preparing for the final surgical examination, and had that day completed it.

After the dinner there was an exhibition of letters written by John Hunter when he was naval surgeon with the Belle Île expedition. The guests then gathered in the lecture theatre where Dr. Beattie had arranged a cinematograph show including films of the vocal cords in health and disease and the first talking-pictures to be seen at the College. The film of the opening of the Buckston Browne Research Farm presented many familiar figures; but none so familiar, perhaps, as Felix the Cat, who concluded the entertainment.

The following is a list of those present:—

Council.—Sir Cuthbert Wallace (president), Prof. A. H. Burgess (Manchester), and Sir Charles Gordon-Watson (vice-presidents), Sir Holburt Waring, Prof. E. W. Hey Groves (Bristol), Mr. F. J. Steward, Mr. C. H. Fagge, Mr. W. Sampson Handley, Mr. Wilfred Trotter, F.R.S., Mr. Victor Bonney, Prof. G. Grey Turner, Mr. Hugh Lett, Mr. R. G. Hogarth (Nottingham), Prof. R. E. Kelly (Liverpool), Prof. Graham Simpson (Sheffield), Mr. A. E. Webb-Johnson, Mr. G. Gordon-Taylor, Mr. R. C. Elmslie, Mr. L. R. Braithwaite (Leeds), Mr. H. S. Souttar, Mr. W. Girling Ball, and Mr. Seymour Barling.

Fellows.—Mr. A. S. Blundell Bankart, Mr. L. R. Broster, Sir Buckston Browne, Mr. F. F. Burghard (Burton-on-Trent), Mr. H. Jackson Burrows, Mr. Robert Cooke (Bristol), Mr. R. K. Debenham (Birmingham), Mr. Harvey Jackson, Mr. R. Watson Jones (Liverpool), Mr. J. C. Leedham-Green, Mr. O. V. Lloyd-Davies, Mr. G. Percival Mills (Birmingham), Mr. John Morley (Manchester), Mr. W. G. Mumford, Mr. Lionel Norbury, Mr. Michael J. Smyth, Mr. W. G. Sutcliffe, Mr. H. W. Symons (Leeds), Mr. H. Bell Tawse (Nottingham), Mr. Cecil Wakeley, Colonel J. M. Weddell, Mr. James Whillis, and Mr. N. G. Wigram.

Members.—Dr. G. G. Allan, Mr. L. D. Bailey, Dr. Frederick Barker (Parkstone), Dr. P. G. A. Bott, Mr. Arthur Bulleid, Dr. F. G. Caley, Dr. A. E. Carver (Torquay), Mr. F. L. Cassidi, Dr. F. B. Chavasse (Liverpool), Mr. W. H. Coldwell, Dr. Macdonald Critchley, Dr. T. M. Davie, Dr. H. P. S. Devitt, Dr. T. F. Fox, Mr. C. R. Edwards, Dr. David Forsyth, Dr. E. P. Furber, Dr. Harold Gardiner-Hill, Dr. L. P. Garrod, Dr. A. Hope Gosse, Dr. Arnold Gregory (Manchester), Colonel A. E. Hamerton, Dr. T. L. Hardy (Birmingham), Dr. T. H. Harker (Southport), Mr. A. G. Hewer, Mr. C. T. Holford (Burton-on-Trent), Dr. N. G. Horner, Dr. J. B. Howell, Dr. J. T. Hunter, Dr. A. G. Maitland-Jones, Dr. Geoffrey Marshall, Dr. D. J. Martin (St. Leonards), Mr. William Neil Maclay, Dr. H. L. Oldershaw, Dr. T. Wilson Parry, Dr. Norman L. Price (Bristol), Mr. L. W. Proger (pathological curator), Dr. R. J. V. Pulvertaft, Dr. H. J. Roper (Leeds), Dr. M. Radford, Dr. E. T. Roberts (Glasgow), Dr. W. H. Scott-Easton (St. Mary Cray), Mr. E. T. Shorland (Westbury), Dr. J. H. Sheldon (Wolverhampton), Dr. G. Evan Spicer, (St. Albans), Dr. P. B. Spurgin, Mr. G. V. Steward (Fleet), Mr. Edgar Olive Turner (Great Missenden), Dr. G. de Bec Turtle, Mr. H. Stobie, Mr. H. S. Wacher, Dr. Cecil Wall, Dr. E Welch (Leeds), and Dr. L. E. H. Whitby.

Others present.—Dr. J. W. McNee, Mr. H. H. Rew (secretary to the Examining Board), Dr. John Beattie (conservator and director of research), Mr. W. R. Le Fanu (librarian), Mr. Kennedy Cassels (secretary), and Mr. A. J. E. Cave (assistant conservator).

THE SERVICES

ROYAL NAVAL MEDICAL SERVICE

Surg. Lt.-Comdrs. J. V. Williams to *Galatea*, and as Squadron M.O.; W. M. Greer to *Despatch*; and E. T. S. Rudd to *Victory*, addl. for R.N.B.

Surg. Lt. C. G. Owen to *Despatch*.

ROYAL ARMY MEDICAL CORPS

Lts. (on prob.) secd. under Art. 213, Royal Warrant for Pay and Promotion, 1931 (vide THE LANCET, Nov. 16th, 1935, p. 1146): W. N. L. Haynes, J. F. Wilson, J. R. Kellett, C. P. Stevens, J. H. Caverhill, K. G. F. Mackenzie, and J. A. Farfor.

TERRITORIAL ARMY

Supernumerary for service with the O.T.C.—Lt. H. R. Thompson to be Capt. Maj. J. Whillis (empld. Durham Univ. Contgt., Sen. Div., O.T.C.) resigns his commn. and retains his rank, with permission to wear the prescribed uniform.

Capt. N. H. Hammer to be Maj.

Capt. P. Malpas resigns his commn.

Lt. A. P. McEldowney to be Capt.

J. L. Swanston (late Cadet, Brighton Grammar School Contgt., Jun. Div., O.T.C.), to be Lt.

J. G. Scott (late Offr. Cadet, Glasgow Univ. Contgt. (Med. Unit), Sen. Div., O.T.C.), to be Lt.

T. Seager and C. K. Sconce to be Lts.

The King has conferred the Efficiency Decoration upon the undermentioned Officers under the terms of the Royal Warrant dated Sept. 23rd, 1930: Lt.-Col. J. F. O'Grady, and Majs. D. Stewart, R. J. W. A. Cushing, A. C. MacDonald, M.C., and W. A. Jackman.

ROYAL AIR FORCE

Flight Lt. A. H. Barzilay relinquishes his commission on appointment to a permanent commission in the Indian Medical Service.

Dental Branch.—Flight Lt. R. H. Matthews to R.A.F. General Hospital, Hinaidi, Iraq.

INDIAN MEDICAL SERVICE

Col. E. C. Hodgson, D.S.O., retires.

Lt.-Col. J. Scott, D.S.O., O.B.E., Surgeon to the C.-in-C., is proceeding on leave and vacates his appointment.

The undermentioned appts. are made:—

Majs. to be Lt.-Cols.: S. Nag; J. Rodger, M.C.; and G. B. Hanna.

To be Capts. (on prob.): A. H. Barzilay, R. K. Muir, and P. M. McSwiney.

To be Lts. (on prob.): J. A. L. McCullough, D. J. P. Parker, C. L. Ash, T. C. McG. McD. Morrison, V. D. Gordon, B. de Burca, D. R. Nicol, J. Morgan, and T. Sommerville.

Lts. C. K. Byrnes and G. F. Adye-Curran are restd. to the Estbt.

Capts. A. M. Khan, P. P. Chowdry, H. K. Handoo, P. N. Sathe, D. N. Basu, and H. S. Ahluwalia relinquish their temp. commns.

COLONIAL MEDICAL SERVICE

Dr. R. Calderwood, Miss M. H. James, M.B., and Dr. A. L. Sheild have been appointed Medical Officers, Malaya; Miss V. R. Sharp, M.R.C.S., Medical Officer, Zanzibar; and Miss S. M. Young, M.B., Medical Officer, Health Department, Palestine.

PARKES MEMORIAL PRIZE.—Surgeon-Lieutenant J. L. S. Coulter, R.N., has been awarded the Parkes memorial prize for 1935, for his essay on preparation for tropical service in the Royal Navy. The prize is awarded annually to the writer of the best essay on a subject connected with naval or military hygiene.

PANEL AND CONTRACT PRACTICE

Compromising Silence

A PATIENT'S widow told the following story to a medical service subcommittee. Her husband, who had been treated by Dr. A. for rheumatism over a period of three months, was in extreme pain on a particular Sunday. She called at the surgery that evening and saw Dr. A., who said he would call next morning and did not. Her husband being still in pain she went again on Monday evening for the doctor who called at 7.30 P.M. He made no physical examination, advised the patient to continue to take the medicine already prescribed and to remain indoors pending a further visit. The pain did not abate and on the following Thursday the wife went to the surgery and rang two or three times without obtaining a reply. Another doctor was called in, who found the man suffering from pleurisy. A third doctor arranged for his admission to hospital, suffering from rheumatic fever and pleurisy, where he remained for some weeks, dying about two months after his discharge. Dr. A. never saw the patient again, nor did he respond to any letters addressed to him by the committee which makes the following comment:

"In the absence of any communication whatsoever from the practitioner we decided to accept in its entirety the statement made by the complainant, who appeared to us to be a witness of truth. The practitioner has made no attempt to refute any of the statements made by the complainant. There was, of course, no legal obligation on the respondent either to answer letters addressed to him by the Committee or to attend before us, but he could hardly expect his conduct in this respect to produce a favourable impression. This is in itself a serious indication of a lack of any sense of responsibility in the general conduct of his practice, and he has only himself to thank if thereby he has been deprived of the opportunity of presenting his conduct in relation to this case in a less unfavourable light than that in which we have been compelled to view it."

It may be that the doctor had a perfectly good answer in reply to his alleged failure to provide treatment for an insured person, but he will now be asked by the Ministry of Health to explain not only this but his attitude to the committee, and runs the risk of removal from the medical list. It seems a pity.

The Thumb which Went Wrong

The suggestion is sometimes made that the proceedings of medical service subcommittees savour of Star Chamber methods. Reference was made in this column recently to a case in which the committee commented in no unmeasured terms upon the attitude of the employer of an insured person by whom a complaint was raised against a doctor. The discussion in a northern insurance committee on a case of alleged neglect, with the eventual necessity for the terminal phalanx of an insured person's right thumb to be amputated, suggests that the doctor gets a fairer hearing in the mixed committee than he would if a committee of laymen conducted the investigations. A patient consulted his doctor in February, 1935, for a slight injury to his thumb which was found to be septic. The doctor incised and drained the thumb, gave instructions about the treatment and prescribed ointment and bandage. The patient attended at the surgery on the next three days and received appropriate treatment and subsequently further treatment was provided either by the doctor or one of his partners at intervals of not less than seven days. Early in the course of treatment the doctor suggested the desirability of an X ray of the thumb, but his partner thought it unnecessary. On June 4th the patient asked for an X ray and the report disclosed that the bone was diseased. The patient thereupon attended hospital and received treatment there almost daily for three weeks, his thumb being incised and drained on two occasions. He did not, however, see his insurance doctor. Later the patient was told by the house surgeon at the hospital that amputation would be necessary, but on July 1st he left Lancashire for the South Coast where on July 6th a portion only of his thumb was amputated. The committee while expressing sympathy with the insured person at the loss, suffering, and expense he had sustained were of opinion that the doctor had not failed to exercise reasonable care and skill in the treatment of the patient.

A member of the insurance committee criticised the constitution of the subcommittee and said that having read their report he thought someone outside the district ought to give a verdict thereon. He did not think it was right to have three doctors sitting on this subcommittee. Another member pointed out that cases of this kind might seriously affect a number of people in the town and he contended that it should have been dealt with by the full committee. Accidents were happening every day, but most of them were cured in a day or two. Here was a man who had gone through suffering, had lost his thumb which handicapped him in his employment, and had been put to heavy cost to get correct treatment. If the treatment had been correct he would have been back to work within a week. Nevertheless the report of the subcommittee was adopted with a single dissentient.

INFECTIOUS DISEASE

IN ENGLAND AND WALES DURING THE WEEK ENDED NOV. 9TH, 1935

Notifications.—The following cases of infectious disease were notified during the week: Small-pox, 0; scarlet fever, 2742; diphtheria, 1339; enteric fever, 26; acute pneumonia (primary or influenzal), 781; puerperal fever, 28; puerperal pyrexia, 110; cerebro-spinal fever, 11; acute poliomyelitis, 19; encephalitis lethargica, 6; relapsing fever, 1 (Dorking and Morley R.D.); dysentery, 25; ophthalmia neonatorum, 76. No case of cholera, plague, or typhus fever was notified during the week.

The number of cases in the Infectious Hospitals of the London County Council on November 15th was 3189, which included: Scarlet fever, 1180; diphtheria, 1239; measles, 62; whooping-cough, 221; puerperal fever, 21 mothers (plus 11 babies); encephalitis lethargica, 280; poliomyelitis, 7. At St. Margaret's Hospital there were 14 babies (plus 3 mothers) with ophthalmia neonatorum.

Deaths.—In 121 great towns, including London, there was no death from small-pox or enteric fever, 28 (1) from measles, 2 (0) from scarlet fever, 8 (1) from whooping-cough, 26 (3) from diphtheria, 46 (12) from diarrhœa and enteritis under two years, and 38 (7) from influenza. The figures in parentheses are those for London itself.

Liverpool reported 9 deaths from measles, Manchester 8, Bootle 4, and Tynemouth 2. Deaths from diphtheria were scattered over 23 great towns, Birmingham reporting 2, no other town more than 1. The mortality from influenza is similarly scattered over 29 great towns, only Liverpool, Middlesbrough, and Swansea reporting 2 deaths, no other great town more than 1.

The number of stillbirths notified during the week was 234 (corresponding to a rate of 36 per 1000 total births), including 39 in London.

CORRESPONDENCE

RESECTION FOR CARCINOMA OF THE SIGMOID AND SIGMOID RECTUM

To the Editor of THE LANCET

SIR,—In your issue of Nov. 16th Dr. D. P. MacGuire describes an operation for cancer of the rectum which I feel should not be allowed to pass without criticism, especially at the present time when surgeons in this country are striving to simplify operations of this type and reduce the mortality. The operative procedures used in England for removal of cancerous tumours of the upper end of the rectum and lower end of the pelvic colon are now more or less standardised, and although, no doubt, still capable of considerable improvement are a great advance on similar operation of 20 years ago. The operation as described in Dr. MacGuire's article seems a clumsy and unnecessarily complicated procedure with nothing to recommend it. Most surgeons of the present day, myself included, prefer to do the operation in two stages, as it has been found from experience that the safety of the patient is much increased thereby and the immediate mortality lowered. This is also the opinion of many American surgeons, including those of the Mayo Clinic. The colostomy is established at the first operation and the resection performed at the second operation, after a suitable interval to allow of the colon being decompressed and the patient brought into the best possible condition. Moreover, the time which the operation takes, necessarily rather long, is considerably shortened by planning the operation in two stages.

The method of first freeing the rectum from below and completing the resection from the abdomen was first described by Mr. W. B. Gabriel (THE LANCET, 1934, ii., 69) and has advantages both in saving time and making the operation easier. The combined operation, starting in the perineum, only involves one move, from the left lateral to the back position, whereas the procedure described by MacGuire involves at least two moves. In my experience there is no danger in dividing the colon at the first stage of the operation, and although I have done it a considerable number of times I have had no sepsis or peritonitis result from it. There are often adhesions which require separating, but this slight disadvantage is being got over, and in any case is more than outweighed by the greater safety of a two-stage operation, and the much shorter time that the operation takes. I have this last week done a complete second-stage combined operation in a man in 50 minutes, including the time taken in turning the patient and changing gloves.

Blood transfusion is called for only occasionally and I have never known it necessary to use more than one, while parotitis as a complication I have yet to meet with.

An operation that must of necessity be performed upon an elderly patient (since cancer of the rectum is usually met with in patients between the ages of 55 and 65) must, to be successful, be as simple and as quick as is reasonably possible, and an operation which inevitably involves opening the abdomen three times (twice through one incision and once through another), and also opening the pelvis from the perineum, cannot, it seems to me, recommend itself to modern surgeons, and is not one to be copied.

I am, Sir, yours faithfully,

J. P. LOCKHART-MUMMERY.

Harley-street, W., Nov. 18th.

SKIN TESTS FOR WHOOPING-COUGH

To the Editor of THE LANCET

SIR,—In your issue of August 17th last (p. 361) a preliminary report on a skin test for pertussis was published by Drs. Bailey, Waller, and myself. Since then I have been doing further skin tests, and using Sauer's vaccine as an antigen. The results obtained vary with the batch, and it appears to me that the ideal and constant antigen has not yet been achieved. I hope that someone working at this subject will be able to produce a really satisfactory and constant antigen for the intracutaneous skin test.

I am, Sir, yours faithfully,

DONALD PATERSON.

Devonshire-place, W., Nov. 15th.

"KWASHIORKOR"

To the Editor of THE LANCET

SIR,—Under the above title there appears in your last issue (p. 1151) an article by Dr. Cicely Williams with the sub-title "a nutritional disease of children associated with a maize diet." May I firstly enter a protest against the use of a West African native word as the title of an article. How will it be possible for anyone later looking for references to nutritional disorders to recognise one under such a designation? The secondary title is equally open to criticism as it would seem that the association with a maize diet is merely incidental. There is a further objection to the name *kwashiorkor;* it indicates "the disease the deposed baby gets when the next one is born." That such a sequence of events occurs is a common superstition in other parts of Africa as I first pointed out in 1922 (Harvard African Studies, vol. iii., p. 289). Among the Wa-yao of Central Africa the disease, whatever it may be, is called *litango lya kututa*—each successive child is said to push (ku-tuta) the previous one into its grave.

In Dr. Williams's previous article (1933) a number of statements were made in regard to the differential diagnosis between this disease and pellagra, which were calculated to give an entirely false impression of pellagra and I felt constrained to draw attention to them the following year (Arch. Dis. Childhood, 1934, ix., 115). Dr. Williams has now again repeated these misstatements in regard to pellagra, presumably based upon a failure to realise the course and symptomatology of that disease, and tends to confuse the problem at issue. To deal with the table of "Differences between Kwashiorkor and Pellagra":—

1. The affected skin is "black, rugose, and soft" in K. So it may be in typical P. Elsewhere Dr. Williams states it "tends to peel off, leaving a moist, raw surface." This is often the case in P. and while branny desquamation may take place in P., in other cases large ulcerated areas may result.

2. "Extensor surfaces and points of irritation and pressure affected" in K. This of course is common in P. As I have pointed out elsewhere any form of trauma, in its wide sense, may determine the site of the pellagrous eruption. The distribution of the skin affection in K. is probably what one would expect.

3. "Skin not photosensitive" in K.—photosensitive in P. In P. the skin is not always photosensitive. In the West African children it is not proved whether or not the conditions necessary for the exhibition of photosensitivity were present or not.

4. K. "occurs in children under 5 years"—usually under 2 years. P. "rare in children, almost unknown under 2 years." This is a fallacious statement. Pellagra may

occur at any age—a child of a few months, a centenarian—provided the conditions necessary for its production are present.

5. "Reflexes unchanged" in K.: "peripheral neuritis common" in P. It is obviously quite beside the point to compare infants suffering from the acute disease of short duration with more chronic cases of P. with involvement of the nervous system. One would hardly expect to see changes of the reflexes in Dr. Williams's babies.

6. The same is true of dementia—a symptom seen in old chronic pellagrins. Does Dr. Williams seriously consider the absence of dementia in these babies a point of differential diagnosis!

7. The presence or absence of a milk diet is of little importance per se; the point would be the quality of the milk.

8. The same is true of yeast—why compare the yeast-contaminated maize product with the curative effects obtained by the exhibition of large doses of certain yeasts?

Let this suffice in the way of criticism and turn to the positive side of the picture. A typical skin eruption occurring in areas subject to trauma, associated with stomatitis, sores at the muco-cutaneous junctions and vulva (so common in pellagra as I pointed out many years ago), diarrhœa, and nervous irritability—the picture of pellagra—the picture of pellagra to be expected in the infant.

I am, Sir, yours faithfully.

London, W., Nov. 17th. HUGH S. STANNUS.

DELAYED LACTATION

To the Editor of THE LANCET

SIR,—The Truby King school has taught us never to despair of restoring breast-feeding. I should like to ask: How long after the birth of a child is it possible to restore a discontinued supply of breast milk, and after what period of discontinuance?

A Chinese woman, aged 21, was delivered with forceps by a local practitioner under dirty conditions in the village of Yenangyaung on Jan. 24th, 1935. She had a bad perineal tear and developed severe puerperal sepsis for which she was admitted to hospital on Feb. 6th. After a few stormy weeks she was finally discharged from hospital on April 14th, having had no fever for a week but still suffering from a high degree of secondary anæmia. Her condition continued to improve after discharge from hospital and in about two months she was quite well apart from the unrepaired perineal tear. No attempt was made to suckle the baby during this period, and there was no sign of milk in the mother's breast after admission to hospital. When the infant was 12 weeks old it was admitted to hospital for a severe attack of vomiting and diarrhœa due to faulty feeding—partly with sweetened condensed milk and partly wet-nurse's milk. When it recovered from this it was sent home with explicit instructions as to bottle-feeding.

No news was heard from the family until the end of July, when the child developed influenza, and on inquiry as to feeding, it was announced that a few weeks after discharge from hospital at the end of April, the mother had begun to put the child to the breast, and in two weeks had been able to dispense with bottle-feeding and feed the child entirely from the breast. Needless to say, it was fed in the good old Asiatic fashion—i.e., whenever it cried.

The point of interest in this case is that the mother had produced no milk for three months after confinement and then became able to feed her child entirely from the breast—and this in spite of a trying illness in which her life hung in the balance, and which produced a severe secondary anæmia. Further, there was no attempt at regular intervals of feeding, and the only lactagogue used was a much advertised wine.

It would be interesting to know whether cases of this type are common in the experience of pædiatricians.

I am, Sir, yours faithfully,

W. B. CRAWFORD.

B.O.C. Hospital, Nyaunghla, Upper Burma.

A KIND THOUGHT

To the Editor of THE LANCET

SIR,—I shall be obliged if you will allow me a small space in your columns in order that I may express our thanks to a number of German-Jewish doctors who have been compelled to leave their country and to take refuge in this country. In the midst of their difficulties and distress they have collected in small sums over £10 for the Royal Medical Benevolent Fund. They have asked us to accept it as a thank-offering for the kindness and hospitality that has been shown to them and their unfortunate countrymen by England. I think that this kind thought on their part for our poorer brethren merits something more than the official acknowledgment of the contributions; hence this letter.

I am, Sir, yours faithfully,

L. G. GLOVER,
Hon. Treasurer, Royal Medical Benevolent Fund.

11, Chandos-street, London, W.1, Nov. 18th.

OBITUARY

CHARLES HERMANN TATTERSALL, M.R.C.S., D.P.H.

Dr. Tattersall, who died at New Milton, Hants, on Nov. 11th, was for many years medical officer of health for Salford. He qualified at Manchester from Owens College in 1886 and became medical officer to the Barton-upon-Irwell Union; then after taking the Durham diploma in sanitary science he was appointed medical officer of health for Eccles, Oldham, and finally, in 1897, Salford. He lectured on public health at Owens College, examined in the Victoria University, and advised the Salford education committee. The work of the Salford health department during his tenure grew enormously and was transferred from the town hall to the building where it now is. Dr. Tattersall saw a large proportion of the pail closets in the city converted to water carriage and most of the back-to-back houses transformed by through ventilation. He started an open-air school in Peel Park and, after its manifest success, another at Barr-hill, Pendleton. In one aspect of public health work, at least, Dr. Tattersall was well ahead of his time, for, from the commencement of his service in Salford he carefully fostered the work of the Ladies' Public Health Society, a voluntary organisation existing solely for the welfare of mothers and children. Under Dr. Tattersall's administration, from this elementary coöperation was developed, by degrees, a service established on a wider and firmer footing, so that it became a simple matter in 1915 to create a fully fledged maternity and child welfare department, when these activities became generally recognised.

Tattersall was a sound chemist. His inquiry at Oldham into the plumbo-solvent action of the local water was a fine piece of work, but it was in the astonishing outbreak of arsenical poisoning from beer in 1900 that he came to public notice. The acumen of the late Dr. E. S. Reynolds saw something to be investigated in the increasing number of cases of "alcoholic paralysis" admitted to the Manchester

Royal Infirmary, and he actually discovered arsenic in the beer they had been drinking. But it was Tattersall who worked indefatigably to trace the origin of the arsenic and who found the clue in a sample of the sulphuric acid used in making the glucoses and invert sugars supplied to the brewers. His evidence satisfied the Royal Commission on Arsenical Poisoning, held the following year, that the epidemic was due to the use of a particular sugar in the making of beer. Tattersall had noted the great rise in the deaths from alcoholism and peripheral neuritis between June and November, 1900, and the increasing number of patients reported from the poor-law hospital to be suffering from what appeared to be alcoholic neuritis. Numbers of cases of herpes zoster were also being reported. He ascertained that all the sufferers took beer, and was impressed by the fact that many of them had not been excessive drinkers, the amount of beer consumed varying from 1 to 16 pints a day. While the preliminary examination of the beer by Delépine was in hand they heard of Dr. Reynolds's discovery and were able at once to confirm it. In Salford alone there were 107 deaths and 996 reported cases of neuritis; Tattersall had no doubt many more cases had occurred and had been concealed to avoid the stigma of excessive drinking. No cases of illness resulted from the consumption of confectionery or jams or syrups containing glucose, the sufficient explanation being that the invert sugar and glucose were supplied by the works in question only to brewers. It was Tattersall's experience of this outbreak which aroused his keen interest in the possible adulteration of food and drugs, which resulted later in the appointment of a whole-time public analyst for Salford.

Throughout his official life Dr. Tattersall met every new task with energy and the ability of a born administrator; perhaps the best tribute to his work is the fact that so little criticism could be levelled against anything he undertook. He was an excellent pianist and organist, and after his retirement his home was the centre of a musical circle.

GEORGE WILSON BURN, M.R.C.S.Eng., L.S.A.

Dr. Wilson Burn, who died at Cromer on Nov. 11th in his eighty-ninth year, has left an account of his life in a volume of "Stories and Recollections" circulated among his friends a few months ago. He was, he tells us, born a cripple, but his uncle, Adolphus Burn, who practised in Bow and afterwards in Australia, divided his tendo Achillis (tenotomy was then a new operation) with the result that he was able to walk if need be 30 miles in the day. The scarpa shoe which he wore for six months is in the museum of the Royal College of Surgeons under his name. Young George went to school at Newport Pagnell and then at Great Linford, where his paternal grandfather was schoolmaster and where he learnt Latin grammar by heart without the least idea of what it meant. Life in rural Buckinghamshire then had its attractions. There was the circus, there was Wombwell's menagerie, and there was the Long Fair at which Prof. Pepper demonstrated the ancient ordeal by fire. His other grandfather had practised as a doctor in Limehouse all his life—it was owing to his effort that the water in that area was turned on for half an hour every day instead of once a week—and George had always wanted to be a doctor, although his father was anxious for him to go into a bank. But he got his way and after passing the London preliminary scientific from home he entered Bart.'s with a scholarship in October, 1868, where he found two subjects very prominent in the public eye—viz., antiseptics and bone-setting, and came under the spell of James Paget and Lauder Brunton. He clerked for Samuel Gee and dressed for G. W. Callender. After qualifying in 1873 he set up in practice in Brixton, going his rounds in a hansom cab. His wife was a district visitor in the borough and he remained in general practice until 1901 when he retired to St. Albans and later to Cromer. Always interested in botany, most of his time was devoted to gardening, the remainder to popularising Esperanto—a task which took him to many international conferences. His life, he tells us, taught him that at some time or other our words and deeds have been influenced by the words and deeds of someone else who may have been long dead. Hence it behoves us so to speak and to act that any such unconscious influence may be good and beneficial. It was on this principle that Dr. Burn himself acted during his nearly 90 years.

MEDICAL NEWS

University of Cambridge

The following have been appointed examiners:—

Second Examination for M.B., 1936.—Anatomy: Prof. H. A. Harris, Prof. Thomas Walmsley, and (if required) Dr. W. L. H. Duckworth and Dr. Archibald Durward. Physiology: Mr. F. J. W. Roughton, Ph.D., Dr. E. G. T. Liddell, and (if required) Dr. O. A. Trowell, Prof. B. A. McSwiney. Pharmacology (including oral): Prof. E. B. Verney, Dr. Clifford Hoyle, and (if required) Dr. G. W. Theobald, Dr. G. N. Myers, Dr. K. J. Franklin, and Prof. A. St. G. Huggett. General Pathology: Dr. E. T. C. Spooner, Prof. M. J. Stewart, and (if required) Dr. L. E. H. Whitby, Dr. Raymond Williamson, Dr. H. A. Lucas, and Dr. G. P. McCullagh.

Qualifying Examinations, 1936.—Anatomy: Dr. Duckworth, Prof. Walmsley. Physiology: Dr. F. R. Winton and Prof. J. B. Leathes, F.R.S.

Third Examination for M.B., 1936.—Surgery: Mr. Geoffrey Keynes, Mr. A. Tudor Edwards, Mr. R. Davies-Colley, Mr. J. B. Hunter, Mr. W. H. Ogilvie, and (if required) Mr. W. S. Perrin, Mr. Julian Taylor, Mr. Sampson Handley, Mr. Geoffrey Jefferson, Mr. Lancelot Bromley, Mr. W. H. Bowen, Mr. R. M. Vick, and Mr. Ivor Back. *Midwifery*: Dr. Wilfred Shaw, Mr. Stanley Dodd, Dr. Malcolm Donaldson, Mr. William Gilliatt, and (if required) Mr. L. Carnac Rivett, Dr. J. M. Wyatt, Dr. J. R. C. Canney, Mr. V. B. Green-Armytage, Mr. Aleck Bourne, and Mr. Frank Cook. Medicine: Dr. G. S. Haynes, Dr. A. E. Clark-Kennedy, Dr. George Graham, Prof. A. E. Naish, Dr. Arnold Stott, and (if required) Dr. Geoffrey Evans, Dr. Crighton Bramwell, Dr. J. W. McNee, and Dr. C. E. Lakin. Pharmacology, Therapeutics, and Toxicology: Prof. Verney, Dr. T. H. Oliver, and (if required) Prof. W. J. Dilling, Prof. K. D. Wilkinson, Prof. J. H. Burn, and Dr. Leslie Cole.

On Nov. 15th the following degrees were conferred:—

M.D.—D. B. Wilson.
M.B., B.Chir.—D. P. King.
M.B.—*R. W. Ironside and C. W. Thomas.
B.Chir.—N. C. Lendon.

* By proxy.

The Royal Society

The list of names to be recommended for election to the council of this society on Nov. 30th contains the following: president, Sir William Bragg, O.M.; treasurer, Sir Henry Lyons; secretaries, Sir Frank Smith and Prof. A. V. Hill; foreign secretary, Prof. A. C. Seward. The council is to include Prof. E. D. Adrian, F.R.C.P., Sir Patrick Laidlaw, F.R.C.P., Prof. Robert Robison, and Mr. Wilfred Trotter, F.R.C.S. The Davy medal has been awarded to Prof. Arthur Harden for his work on biochemistry and especially for his fundamental discoveries in the chemistry of alcoholic fermentation.

Harveian Society of London

The Buckston Browne prize for 1935 has been awarded to Dr. W. R. Fearon, of Trinity College, Dublin, for his essay on nutritional factors in disease.

Birmingham General Hospital

Sir Herbert Austin has given £2000 to this hospital for the provision of a third X ray apparatus.

Royal College of Surgeons of England

A meeting of the council was held on Nov. 14th, with Sir Cuthbert Wallace, the president, in the chair. Mr. Victor Bonney was re-elected representative on the Central Council for District Nursing for a period of three years. The council decided to guarantee a sum of £1625 from the Prophit trust towards the expenditure of the governing body of Radium Beam Therapy Research for the year beginning next March.

Diplomas of membership were granted to the candidates named on p. 1094 of our issue of Nov. 9th as receiving the L.R.C.P. (except T. D. Chablani, Bishnupada Datta, E. W. Knowles, and Phyllis J. M. Sykes). A licence in dental surgery was granted to Tord Borke, and diplomas in public health and child health were granted jointly with the Royal College of Physicians to the candidates named in THE LANCET, Nov. 9th, p. 1094. Diplomas in anæsthetics were granted jointly with the Royal College of Physicians to L. M. Routh and S. T. Rowling.

The following hospitals were approved, with the posts specified, for recognition for the six months' surgical practice required of candidates for the final fellowship examination:

Cumberland Infirmary, Carlisle (senior house surgeon); Hammersmith Hospital, London (1st, 2nd, and 3rd assistant in the surgical service, and 1st, 2nd, 3rd, and 4th house surgeon); Miller General Hospital, Greenwich (resident surgical officer and 1st and 2nd house surgeon until July 31st, 1937).

British College of Obstetricians and Gynæcologists

At a meeting of the council held on Nov. 16th with Dr. J. S. Fairbairn, the president, in the chair, the following were elected to the membership: P. A. McCleod, C. M. Plumptre, T. R. Plunkett, and H. Rowntree.

A. A. Gemmell (Liverpool) was formally admitted to the fellowship and the following to the membership:—

Bernard Berger, G. A. Davies, F. J. Hayden, A. M. Hill, J. L. Jona, Alice M. Kenny, Hilda N. Lloyd, H. I. McClure, L. B. Patrick, T. G. Robinson, G. R. Sparrow, G. R. Stoneham, Jane B. Stubbs, W. E. C. Thomas, C. K. Vartan, and Ramsay Warden.

Ahmed Bey Shafik (Cairo) was admitted to the foundation fellowship in absentia, and the following were admitted to the membership in absentia:—

Narendranath Basu, J. R. S. Beard, James Black, J. H. Boyd, W. G. Cosbie, H. D. De Sa, K. C. Donovan, M. B. Fraser, Israel Goldberg, A. F. Hobson, J. S. Hovell, T. D. Hughes, J. Jhirad, Hilda M. Lazarus, D. M. Low, Ronald McRobert, G. B. Lowe, R. E. Magarey, A. A. Moon, E. L. Newman, Hemendranarayan Ray, Ida B. Saunders, T. H. Small, R. S. Townsend, H. B. Van Wyck, and James Waterman.

At the end of the meeting, Sir Ewen Maclean assumed the office of president. A vote of appreciation of the services of Dr. Fairbairn during the past three years as president was adopted by the council.

ANNUAL DINNER

The presidents of both sister colleges supported the president of the British College of Obstetricians and Gynæcologists at the fifth dinner of the college, held at Claridge's on Nov. 15th. It was Dr. Fairbairn's leave-taking of the presidential chair; on Saturday he was to surrender it to Sir Ewen Maclean. Lord Dawson, in giving the toast of "The College," spoke of its founder and first president, the restless lovable torch-bearer who never forgot—or allowed anybody else to forget—that he was bearing a torch; "and now," he said, "after six years you have a membership of which you may be proud, and you have brought the old country and the new together in a fresh bond of service." The college had come to the front at a time when the public was beginning to look for help to the medical profession; for with the rationing of babies they were coming to depend on quality rather than quantity, more than when there was a bigger turn-over. Speaking of the dangers of maternity, Lord Dawson said he wanted the public to realise that quite as much depends on the house, and on the state of the mother before birth, as on her condition during and after it. In the coöperation growing up between medicine and local health authorities, he begged the college to keep the lead in its own hands in guiding the maternity service. In their search for a means of relieving pain which could safely be put in the hands of the midwives themselves he asked them to refuse to be hustled. Finally he congratulated the college on its good work. It had initiated post-graduate study, it had gained a standing in the world, it had shown leadership in public health policy, and it had fostered fellowship the world over. The colleges would now move forward in a spirit of coöperation.

Dr. Fairbairn in reply rejoiced that both the senior colleges were there. In these early years the principles on which the obstetric college should base its work had gradually crystallised out. The problem of analgesia in childbirth was, he thought, proving more difficult to solve than had been thought; the committee's report on it was to be presented to the council on the morrow. The estimate of cost had been found grossly inadequate, particularly in the cost of gas inhalation, where he hinted at leakage. Dr. Fairbairn had brought back with him from Australia the greetings of Prof. Marshall Allan and his colleagues at Melbourne. There were, he said, two outstanding events during his overseas visit: the admission of 17 new Australian members, and a luncheon given by the foundation fellows in Australia—a real family party. Not having time to visit New Zealand he had asked Mr. Bright Banister to delegate there for him, and he had found the same enthusiasm for the college. At home the internal work was going on. They had revised the articles and the by-laws. The rising curve of membership showed as yet no sign of falling off.

Sir Ewen Maclean gracefully proposed the guests and Sir Cuthbert Wallace replied, speaking of the debt he owed to Dr. C. J. Cullingworth who, he said, took the gynæcological knife out of the surgeon's hands. The dinner concluded at an early hour when the floor was cleared for dancing, there being many young people present.

Royal Faculty of Physicians and Surgeons of Glasgow

At the annual meeting of the faculty on Nov. 4th the following were elected office-bearers for the ensuing year:—president: Prof. Archibald Young; visitor: Dr. John Henderson; hon. treasurer: Mr. James H. MacDonald; hon. librarian: Dr. W. R. Snodgrass; other councillors: Mr. G. H. Edington (representative to the General Medical Council), Dr. Carstairs Douglas, Dr. A. Brown Kelly, Mr. John Patrick, Mr. Roy F. Young, Mr. R. Barclay Ness, Mr. J. Forbes Webster, Mr. John Gracie, Dr. J. Souttar McKendrick, Mr. John Rowan, and Mr. A. G. Faulds.

The honorary higher dental diploma was conferred on Mr. J. Forbes Webster, dean of the Incorporated Glasgow Dental Hospital.

Royal Sanitary Institute

The next health exhibition of this institute will be held at Southport in July, 1936, in connexion with its annual health congress. Further information may be had from the sceretary at 90, Buckingham Palace-road, London, S.W.1.

Medical Society of Individual Psychology

At a meeting of this society on Nov. 14th Dr. J. A. Hadfield gave an address entitled a Contribution to Psychopathology. He suggested that a working basis of psychopathology was possible which was independent of the hypothesis of sexual libido as a primary urge; upon the elaboration or perversion of which subsequent equilibrium would depend. This basis was provided by an investigation into the infant and child life in relation to maternal protection and love. He suggested that such investigation would provide the necessary help to the understanding of many of the neuroses and psychoneuroses. Anxiety and other emotional states and the many psychoneuroses such as hysteria and delinquency appeared often to be related to the deprivation of protective love rather than to sexual repression on the one hand, or organ inferiority on the other. The specific symptom was, he suggested, conditioned by the state of mind of the child at the time of deprivation; and such a state of mind was often determined by the age and stage of development of the child. Thus depression, sex perversions, and anxiety states usually originated in the first year of life, obsessional states in the second year (or aggressive phase), conversion hysteria about the age of three, and delinquencies in the phase of independence at four.

Central Housing Advisory Committee

Under the Housing Act, 1935 the Minister of Health has appointed a committee to advise him on questions of housing. He will himself be chairman, and the members will be Lord Balfour of Burleigh, Sir Harold Bellman, Mr. G. M. Burt, the Earl of Crawford and Balcarres, Mrs. M. M. Dollar, J.P., the Earl of Dudley, Sir Francis Fremantle, M.D., M.P., Miss Megan Lloyd George, M.P., Mr. George Hicks, Mr. A. L. Hobhouse, J.P., Mr. L. H. Keay, F.R.I.B.A., the Countess of Limerick, Mr. O. Ling, J.P., Sir Miles Mitchell, J.P., Mr. C. J. Newman, Mr. E. G. Rowlinson, J.P., Sir Isidore Salmon, M.P., the Rev. E. St. G. Schomberg, Mr. L. Silkin, L.C.C., Mr. J. A. Simpson, Sir Raymond Unwin, F.R.I.B.A., Mr. J. A. F. Watson, Sir Seymour Williams, Dr. J. Greenwood Wilson, and the Bishop of Winchester. The secretary is Mr. H. H. George, to whom communications may be addressed at the Ministry of Health.

Battersea General Hospital

On Nov. 19th, in the Chancery Division, an alteration of the objects of this hospital was made by eliminating from them clauses relating to vivisection, as a result of which serums and antitoxins can now be used. For the last three years the hospital has had a large deficiency, but it will now be eligible for assistance from the King Edward Hospital Fund.

THE QUETTA EARTHQUAKE

LIST OF AWARDS

AMONG honours conferred for services rendered in connexion with the recent earthquake in Baluchistan are the following:—

C.I.E.

Lieut.-Colonel Samuel George Steele Haughton, M.D. Dub., O.B.E., I.M.S.
Officiating A.D.M.S., Zhob (Independent) Brigade Area, Western Command.

O.B.E. (Civil)

Lieut.-Colonel Vaman Raghunath Mirajkar, F.R.C.S. Eng., I.M.S.
Professor of Operative Surgery, King Edward Medical College, Lahore, Punjab.

O.B.E. (Military)

Lieut.-Colonel Jacob William Vanreenen, M.B., F.R.C.S. Edin., I.M.S.
Officer commanding No. 4 Company, Indian Hospital Corps, Quetta.

Kaisar-i-Hind Gold Medal

Mrs. Constance Ellice May Berridge, M.B. Glasg.
Lady Divisional Superintendent, Moghalpura Nursing Division, North-Western Railway Corps.

Major James Ernest Gray, M.B. Belf., I.M.S.
Civil Surgeon, Karachi, Bombay.

Kaisar-i-Hind Silver Medal

Miss Ruth Hooton, M.B. Leeds.
Of the Church of England Zenana Missionary Society.

Miss Nora Proctor Sims, M.R.C.S.
Of the Women's Medical Service, India.

Henry Bowlby Tristram Holland, M.B. Edin.
Of the Church Missionary Society.

Arthur Durnford Iliff, M.R.C.S.
Of the Church Missionary Society.

Captain Bertrand Temple-Raston, L.M.S.S.A., I.M.S.
Civil Surgeon, Dera Ghazi Khan, Punjab.

Medical Diary

SOCIETIES

ROYAL SOCIETY OF MEDICINE, 1, Wimpole-street, W.

MONDAY, Nov. 25th.

Odontology. 8 P.M. Mr. J. Draper Cambrook: Snake Venom. Mr. F. N. Doubleday: Two Unusual Cases of Impacted Lower Third Molars. Paper: Dr. T. H. Roper-Hall: The Barbiturates: their Chemistry, Action, and Toxicology.

Tropical Diseases and Parasitology. 8.30 P.M. Dr. Magarinos Torres: Further Studies on the Pathology of Alastrim and their Significance in the Variola-alastrim Problem. (Lloyd Roberts lecture).

TUESDAY.

Medicine. 5 P.M. Sir Edmund Spriggs: The Causes and Treatment of Obesity. Followed by Dr. H. Gardiner-Hill and Dr. Donald Hunter.

WEDNESDAY.

Comparative Medicine. 5 P.M. (Lister Institute, Chelsea Bridge-road, S.W.). A. S. McFarlane: 1. Spinning-top Centrifuge and Speed-recording Mechanism. C. L. Oakley: 2. Extensive Tuberculosis in a Fowl. 3. Cerebral Tumours in Fowls. 4. Embryonic Tumours of the Kidney in Fowls. V. Korenchevsky: Changes in the Sexual Organs of Spayed Female Rats Treated with Male Sexual Hormone. J. R. M. Innes: "Swayback": a Demyelinating Disease of Young Lambs. J. T. Edwards: Transmission of Human Acute Coryza to Hedgehogs. H. Burrows: Pyelitis of Pregnancy considered in the Light of Conditions Occurring in Mice after the Prolonged Administration of Œstrone. D. W. Henderson: Passive Immunisation against Experimental Vibrion Septique Infection.

THURSDAY.

Urology. 8.30 P.M. Mr. E. W. Riches: 1. Urethrogram of Prostatic Diverticulum. Mr. James Carver: 2. Calculi in a Vesical Diverticulum in a Woman. 3. New Growth of Kidney with Ulceration of Bowel. 4. Congenital Maldevelopment of Kidney. 5. Large Pelvic Cyst producing Acute Retention of Urine in a man of 65. Mr. Malcolm Baillie: 6. Sections of Epididymomata. Mr. A. E. Roche: 7. Hæmato-nephrosis and Carcinoma of the Renal Pelvis. Mr. H. P. Winsbury-White: 8–10. Urethral Calculi. Mr. T. E. Hammond: 11. Adenoma of the Kidney. Mr. Hamilton Bailey: 12. Total Cystectomy by Hinman's Method. 13–14. Plastic Operation for Pelvic Hydronephrosis. Mr. R. H. O. B. Robinson: 15. Radiograms Illustrating Double Ureter and Renal Pelvis. Mr. Reginald Payne: 16–18. Kidney in (*a*) Periarteritis Nodosa. (*b*) Aplastic Anæmia. (*c*) Lymphatic Leukæmia. 19. Phleboliths from Prostatic Plexus of Veins.

FRIDAY.

Obstetrics and Gynæcology. 8 P.M. Dr. D. Coutts: Fœtus Removed from Mother's Thigh after Rupture of Uterus. Dr. Arthur M. Hill: Post-abortal and Puerperal Gas-gangrene, report of thirty cases. Dame Louise McIlroy: Atresia of the Vagina: Operation followed by Pregnancy and Cæsarean Section. Dr. Ida Hirschmann: Derangement of Cyanide Metabolism—the Cause of Pregnancy Toxæmia.

MEDICAL SOCIETY OF LONDON, 11, Chandos-street, W.
MONDAY, Nov. 25th.—8.30 P.M., Dr. R. D. Lawrence and Dr. George Graham: The Use and Abuse of Insulin.

MEDICO-LEGAL SOCIETY.
THURSDAY, Nov. 28th.—8.30 P.M. (Manson House, 26, Portland-place, W.), Dr. F. J. McCann: Some Medico-legal Problems in connection with Pregnancy and Parturition.

ST. JOHN'S HOSPITAL DERMATOLOGICAL SOCIETY, 49, Leicester-square, W.C.
WEDNESDAY, Nov. 27th.—4.15 P.M., Clinical Cases. 5 P.M., Dr. L. Forman: Rosaceous Tuberculide.

SOCIETY OF MEDICAL OFFICERS OF HEALTH, 1, Thornhaugh-street, W.C.
Fever Group.
FRIDAY, Nov. 29th.—4 P.M., Dr. E. H. R. Harries: Fever Hospital Practice in Restrospect and Prospect (presidential address).

LECTURES, ADDRESSES, DEMONSTRATIONS, &c.

FELLOWSHIP OF MEDICINE AND POST-GRADUATE MEDICAL ASSOCIATION, 1, Wimpole-street, W.
MONDAY, Nov. 25th, to SATURDAY, Nov. 30th.—INFANTS HOSPITAL, Vincent-square, S.W. Mon., Wednes., and Fri., 8 P.M., course in anatomy and physiology for the F.R.C.S. (primary).—LONDON LOCK HOSPITAL, 91, Dean-street, W. Afternoon course in venereal disease.—INFANTS HOSPITAL, Vincent-square, S.W., afternoon course in diseases of infants.—ST. MARK'S HOSPITAL, City-road, E.C. All-day course in proctology.—HOSPITAL FOR DISEASES OF THE SKIN, Blackfriars, S.E. Afternoon course in dermatology.—BROMPTON HOSPITAL, S.W. Sat. and Sun., course in chest diseases.—Courses are open only to members of the fellowship.

ROYAL FREE HOSPITAL, Gray's Inn-road, W.C.
FRIDAY, Nov. 29th.—9.45 A.M., Mr. Norbury: Treatment of Carcinoma of the Rectum. 11.30 A.M., Dr. Rorke: Some Cases of Venereal Disease, and their Treatment. 2 P.M., Miss Barry: Treatment of Varicose Veins and

Hæmorrhoids by Injection. 3 P.M., Dr. Nicol: Psychological Medicine.
SATURDAY.—9.45 A.M., Dr. Davies: Anæmia. 11.30 A.M., Dr. Ulysses Williams: X Ray. 2 P.M., Dr. Ledingham: New Drugs. 3 P.M., Prof. Webb: Immunisation with Toxoids.
SUNDAY, Dec. 1st.—10 A.M., Prof. Amy Fleming and staff of Unit: Obstetric Lecture-demonstrations, including anæsthetics in midwifery practice.
The course is open only to former students of the hospital.

NATIONAL HOSPITAL, Queen-square, W.C.
MONDAY, Nov. 25th.—3.30 P.M., Dr. Greenfield: The Chemistry of Cerebro-spinal Fluid.
TUESDAY.—3.30 P.M., Dr. Critchley: Epilepsy and Allied Conditions.
WEDNESDAY.—3.30 P.M., Dr. Kinnier Wilson: Clinical Demonstration.
THURSDAY.—3.30 P.M., Dr. Walshe: The Motor System (III.).
FRIDAY.—3.30 P.M., Dr. Gordon Holmes: Disorders of Vision (II.).
Out-patient clinic daily at 2 P.M.

HOSPITAL FOR SICK CHILDREN, Great Ormond-street, W.C.
THURSDAY, Nov. 28th.—2 P.M., Mr. G. G. Penman: Abnormalities and Diseases of the Eye in the Young Infant 3 P.M., Dr. D. N. Nabarro: Congenital Syphilis (I.).
Out-patient clinics daily at 10 A.M. and ward visits at 2 P.M. (except on Wednesdays).

CHARING CROSS HOSPITAL, W.C.
THURSDAY, Nov. 28th.—5 P.M., Prof. Edward Mellanby, F.R.S.: The Rapid Advance of Science since the Time of Huxley. (Huxley lecture.)

HOSPITAL FOR EPILEPSY AND PARALYSIS, Maida Vale, W.
THURSDAY, Nov. 28th.—3 P.M., Dr. Wilfred Harris: Pains about the Head and Neck.

ST. PAUL'S HOSPITAL, Endell-street, W.C.
WEDNESDAY, Nov. 27th.—4.30 P.M., Dr. H. N. Webber: Anæsthetics in Urology.

WEST LONDON HOSPITAL POST-GRADUATE COLLEGE, Hammersmith, W.
MONDAY, Nov. 25th.—10 A.M., skin clinic, medical wards. 11 A.M., surgical wards. 2 P.M., surgical and gynæcological wards, gynæcological and eye clinics. 4.15 P.M., Dr. Maurice Shaw: The Truth about Peptic Ulcer.
TUESDAY.—10 A.M., medical wards. 11 A.M., surgical wards. 2 P.M., throat clinic. 4.15 P.M., Dr. Owen: Hæmorrhage and Jaundice in Infants.
WEDNESDAY.—10 A.M., children's wards and clinic, medical wards. 2 P.M., eye clinic. 4.15 P.M., Mr. Woodd Walker: Diseases of the Hip-joint.
THURSDAY.—10 A.M., neurological and gynæcological clinics. Noon, fracture clinic. 2 P.M., eye and genito-urinary clinics. 4 P.M., venereal diseases.
FRIDAY.—10 A.M., skin clinic. Noon, lecture on treatment. 2 P.M., throat clinic.
SATURDAY.—10 A.M., children's and surgical clinics, medical wards.
The lectures at 4.15 P.M. are open to all medical practitioners without fee.
Operations, medical and surgical clinics daily at 2 P.M.

KING'S COLLEGE HOSPITAL, Denmark Hill, S.E.
THURSDAY, Nov. 28th.—9 P.M., Mr. V. E. Negus: Tuberculosis of the Ear, Nose and Throat.

SOUTH-WEST LONDON POST-GRADUATE ASSOCIATION.
WEDNESDAY, Nov. 27th.—4 P.M. (St. James' Hospital, Ouseley-road, S.W.), Dr. Russell J. Reynolds: Cine-radiography.

HAMPSTEAD GENERAL AND NORTH-WEST LONDON HOSPITAL, N.W.
WEDNESDAY, Nov. 27th.—4 P.M., Dr. P. Finigan: Aims and Methods of Modern Dentistry.

LONDON SCHOOL OF DERMATOLOGY, 49, Leicester-square, W.C.
TUESDAY, Nov. 26th.—5 P.M., Dr. R. T. Brain: Virus Diseases of the Skin.
THURSDAY.—5 P.M., Dr. Knowsley Sibley: Electro-therapeutics.

ST. JOHN CLINIC, Ranelagh-road, S.W.
FRIDAY, Nov. 29th.—4.30 P.M., Dr. C. A. Robinson: The Use of Diathermy in Some Menopausal Syndromes.

ROYAL INSTITUTION, 21, Albemarle-street, W.
TUESDAY, Nov. 26th.—5.15 P.M., Prof. Edward Mellanby, F.R.S.: Modern Views on Nutrition. (First of four lectures.)

UNIVERSITY OF SHEFFIELD.
FRIDAY, Nov. 29th.—3 P.M. (Royal Hospital), Dr. E. Fretson Skinner. 3 P.M. (Royal Infirmary), Dr. Robert Platt: Medical Cases. 3 P.M. (Jessop Hospital), Prof. John Chisholm: Gynæcological Cases.
SUNDAY, Dec. 1st.—10.30 A.M. (Royal Hospital), Dr. E. Fretson Skinner: Medical Cases. 10.30 A.M. (Royal Infirmary), Dr. Robert Platt: Medical Cases. Mr. Alan Fawcett: Surgical Cases. 10.30 A.M. (Jessop Hospital), Mr. Eric Stacey: Gynæcological Cases.

GENERAL INFIRMARY, Leeds.
TUESDAY, Nov. 26th.—3.30 P.M., Dr. Bibby: Some Aspects of Congenital Syphilis.

PUBLIC DISPENSARY, Leeds.
WEDNESDAY, Nov. 27th.—4 P.M., Mr. L. N. Pyrah: Differential Diagnosis of the Acute Abdomen.

ANCOATS HOSPITAL, Manchester.
THURSDAY, Nov. 28th.—4.15 P.M., Dr. A. Renshaw: Asphyxia.

HOSPITAL FOR CONSUMPTION AND DISEASES OF THE EAR, NOSE, THROAT AND CHEST, Harman-street, Manchester.
WEDNESDAY, Nov. 27th.—4.30 P.M., Mr. V. F. Lambert: Dysphagia.

ROYAL INFIRMARY, Manchester.
TUESDAY, Nov. 26th.—4.15 P.M., Mr. W. R. Douglas: Carcinoma of the Pelvic Colon.
FRIDAY.—4.15 P.M., Mr. Wilson Hey: Demonstration of General Cases.

ST. MARY'S HOSPITALS, Manchester.
THURSDAY, Nov. 28th.—4.15 P.M. (Whitworth-street West Hospital), Dr. Gerrard: Some New Methods in the Diagnosis and Treatment of Obstetric Cases.

GLASGOW POST-GRADUATE MEDICAL ASSOCIATION.
WEDNESDAY, Nov. 27th.—4.15 P.M. (Royal Maternity and Women's Hospital), Prof. S. J. Cameron: Contracted Pelvis.

Appointments

ALLEN, E. H., M.R.C.S. Eng., has been appointed Physiotherapeutist to the Willesden General Hospital.
CRAWFORD, J. H., M.R.C.S. Eng., Hon. Assistant Anæsthetist to the Hove General Hospital.
MCKENNY, C. W., M.D. Dub., D.M.R.E., Radiologist to St. John's Hospital for Diseases of the Skin, London.
MORLAND, ANDREW, M.D., M.R.C.P. Lond., Tuberculosis Officer at University College Hospital.
PRICE, R. KEMBALL, M.D. Lond., Hon. Physician to the Hove General Hospital.
ROSENKRANZ, L.R.C.P. Edin., M.D. Freiburg, Temporary Assistant Radiologist to the South London Hospital for Women.
SIMPSON, S. LEVY, M.D. Camb., M.R.C.P. Lond., Hon. Physician to the Willesden General Hospital.

King's College Hospital.—The following appointments are announced:—
EVANS, P. R., M.B. Manch., M.R.C.P. Lond., Registrar to the Children's Department and Medical Officer in charge of the Rheumatism Clinic;
JOHNSTON, C. M., M.B., Registrar to the Ear, Nose, and Throat Department;
PLAYFAIR, P. H. L., M.B. Camb., F.R.C.S. Eng., Obstetric Registrar and Tutor; and
SMITH, E. J., M.B. Lond., F.R.C.S. Eng., Surgical Registrar.

London County Council Hospital Staff.—The following appointments and promotion are announced. A.M.O. (I.) and (II.)=Assistant Medical Officer, Grades I. and II.:—
ROBERTSON, J. S., M.D. Aberd., D.P.H., Senior A.M.O. (II.), Pinewood Sanatorium;
MILLER, C. P., M.B. Lond., A.M.O. (I.), Queen Mary's, Sidcup;
IRVINE, D. F., M.B. Glasg., House Physician, Hackney;
O'RIORDAN, J. D., M.D. Irel., A.M.O. (I.), Queen Mary's Hospital for Children;
WILEY, V., M.D. Irel., D.P.H., Senior Medical Officer;
BOOME, E. J., M.B. Birm., M.R.C.P. Lond., D.P.H., Principal Assistant Medical Officer; and
MITMAN, M., M.D., M.R.C.P. Lond., D.P.H., D.M.R.E., Divisional Medical Officer.

Births, Marriages, and Deaths

BIRTHS

BESLEY.—On Nov. 14th, at Great Shelford, Cambs, the wife of Surgeon Lieut.-Com. F. W. Besley, R.N., of a son.
BLAIN.—On Nov. 8th, at Edinburgh, the wife of Dr. J. A. Blain, Ardersier, Inverness-shire, of a son.

DEATHS

BROWN.—On Nov. 18th, in London, John Macdonald Brown, M.D. Edin., F.R.C.S. Eng., J.P., formerly of 64, Upper Berkeley-street and Leamington Spa.
BURN.—On Nov. 11th, at Roughton, Cromer, George Wilson Burn, M.R.C.S. Eng., L.S.A., in his 89th year.
BUTT.—On Nov. 12th, at a Bournemouth nursing-home, Colonel Edward Ormiston Butt, R.A.M.C., eldest son of he late John Gillis Butt.
GRANT.—On Nov. 18th, at Bedford Court Mansions, W.C.1, A. A. Cumming Grant, M.B. Glasg., in his 84th year, Chief of the Gaelic Society of London.
MALLESON.—On Nov. 12th, Herbert Cecil Malleson, M.R.C.S. Eng., L.D.S., of Thurlow-road, N.W., aged 54.
MCKENZIE.—On 19th Nov., 1935, at 22, Hampstead-lane, N.6 (and of 9, Weymouth-street, W.), Dan, the dearly loved husband of Dora Christine McKenzie, aged 66. Cremation at Golders Green on Friday, Nov. 22nd, at 12.30. No flowers by request.
ROBERTSON.—On Nov. 12th, accidentally killed, Katherine Octavia Robertson, M.D. Glasg., of Limavady, aged 44 years.
TATTERSALL.—On Nov. 11th, at New Milton, Hants, Charles Hermann Tattersall, M.R.C.S. Eng., D.P.H., L.S.Sc. Durh., many years Medical Officer of Health for Salford.
WOOD-MARTIN.—On Nov. 10th, suddenly, at Cleveragh, Sligo, Annette Kathleen Wood-Martin, M.B. Dub.

N.B.—A fee of 7s. 6d. is charged for the insertion of Notices of Births, Marriages, and Deaths.

NOTES, COMMENTS, AND ABSTRACTS

THE AMERICAN MATERNITY HOSPITAL *

BY K. VERNON BAILEY, M.C., M.D., M.R.C.P., M.C.O.G.

HON. GYNÆCOLOGIST TO ANCOATS HOSPITAL, STOCKPORT INFIRMARY, AND ALTRINCHAM GENERAL HOSPITAL; LECTURER IN OBSTETRICS AND GYNÆCOLOGY IN THE UNIVERSITY OF MANCHESTER

IN a recent visit to Canada and the United States I went over some of the principal hospitals of Montreal, Chicago, and New York, and was received with a courtesy and kindness I shall always remember. Of the six large obstetrical units in these three centres five are less than five years old, and my object in this paper is to give some account of arrangements nowadays made in American hospitals which have been planned, built, and staffed apparently regardless of expense. They represent something new in medical achievement.

Of the six I visited the Chicago Lying-in Hospital is the only one wholly devoted to obstetrics and gynæcology, and it is interesting to find that while it maintains a regular staff it is open to outside practitioners, more than 150 of whom deliver patients there. At all the hospitals most of the patients contribute at least a large proportion of the cost of their upkeep, and there is always spacious accommodation for private cases—usually on a separate floor rather than in a separate block. Roughly speaking, women in the "semi-public" wards, usually 4-bedded, are charged 30*s.* per week; "semi-private" patients in 2-bedded rooms £3 per week; and private patients £6 upwards.

As one would expect, an atmosphere of general *cleanliness* is immediately evident from the spacious entrance hall onwards. *Quiet* is maintained by the use of electrical staff signals from the reception office to the ward corridors, rubber composition flooring, and the installation of sound-proof doors and ceilings to all labour rooms and theatres. The main office in the entrance hall is adequately staffed by clerks, stenographers, and telephonists, as is also the records department. The strictly obstetrical staff has ample assistance in all the ancillary departments.

The Antenatal Clinic

The conduct of antenatal clinics is well illustrated at the Chicago Lying-in Hospital. Here the patients collect in the main out-patient hall from which five separate doors communicate with a long passage. Five senior nurses—one at each door—each call the names of two patients, who proceed through a door into the intervening passage where they are checked by the nurses. They then walk straight into dressing cubicles—which abut in pairs upon the opposite side of the passage—and lock the doors upon themselves. They disrobe, put on a special gown and emerge from the opposite door of the cubicle into the examination room which thus deals with two patients. Here the house surgeon or intern carries out the routine antenatal examination assisted by another intern or student who completes the notes of the case. The patient then returns by the same route to the main hall. By this routine there is a minimum of movement on the part of all concerned. There is privacy for the patient and adequate space and light for the examining doctor and his assistants and students. Moreover, a large number of patients can be examined in this way without loss of time.

At the Royal Victoria Hospital, Montreal, the patient is given a printed card which she takes to a series of examiners (students or nurses) placed at different parts of the clinic. At each of these details are acquired and entered on the card, so that when she arrives on the examination table the history, present weight, blood pressure, urine test, cardiac condition, and so forth are known.

A clinical laboratory is attached to the antenatal clinic as are also rest rooms for the patients who need them.

Admission and Preparation

The admission and preparation rooms, situated near the ambulance entrance, are, I consider, one of the most important parts of the obstetrical unit, in so far as they deliver the newly admitted patient to the wards in a clean and prepared state and militate against contamination of the hospital by dirty clothing or unsuspected infections. They have plain tiled walls and stone floors, and their chief furniture is a large fixed porcelain "preparation bed" with shallow raised edges and drainage grooves. On this the patient is washed and prepared, an enema apparatus being arranged in conjunction with the bed. The room also contains lavatory accommodation, shower and fixed douche. An adjoining examination room has appliances for testing the urine and blood pressure, as well as clinical facilities for obstetrical and general examination. All patients pass through these rooms and none are admitted to the wards until their condition has been thoroughly investigated.

Wards and Delivery Theatres

The *wards* themselves tend more and more to small size. They seldom contain more than six or eight beds and usually only three or four, the advantage being if infection develops its spread can be more readily stopped. A favourite design includes lavatory and bathrooms situated between two of these small wards with entrance from each. Furnishing varies, but there are many innovations. For instance, the St. Mary's Hospital at Montreal is very proud of full-length lockers or small wardrobes let into the walls in groups of two or three, the metal doors being flush with the wall when closed. Each patient has a locker, and clothes and other belongings take up no floor space in the ward.

The *solarium* is a regular institution. It is placed as a rule at the more pleasant end of each ward, according to view or sun, and consists of a spacious glass-protected area furnished as a rest room. There is no doubt that the patient's comfort during the puerperium and the question of the beneficial effect of sunlight and variety is studied to the full.

The lying-in wards are all on the same floor, the labour wards and theatres being on a separate floor. In this way quiet is ensured to the patients during puerperium or pending their own labour. Corridor floors are of composition rubber and interrupted every 15 yards by swing doors which prevent the conduction of noise.

The labour floor comprises a series of first-stage single rooms and delivery theatres. The patient in early labour is removed from the ward or admitted straight to one of the *first-stage rooms*. This is simply furnished as a single room and is provided with a sound-proof door and ceiling. Delivery is carried out in the *delivery theatres*—of which the Chicago Lying-in Hospital has five. These are built and furnished as modern operating-theatres with the exception that a special delivery table is installed. This is simply a modification of the standard operating-table in which quick adaptation from the flat to the lithotomy position is acquired by unhinging and removing the foot end. Sound-proofing is carried out in all delivery theatres, and students' galleries are chiefly situated above the theatre floor and protected by an inclined glass screen. No one but the theatre staff, therefore, occupies the actual floor.

Theatre fittings include Crane's evacuator (used in Cæsarean section), electric infant resuscitator,

* Abridged from a paper read before the North of England Obstetrical and Gynæcological Society on Oct. 25th.

electric incubator, electric clock which signals every ¼ minute (for assistance in counting the fœtal heart sounds), and at St. Mary's Hospital electric foot-operated tables. Forriger's anæsthetic apparatus is largely used—a mixture of ethylene and gas being favoured.

Situated at one end of the theatre floor the *isolation unit* contains five or six single rooms, an examination room, a small clinical laboratory, and its own delivery theatre. All cases which are either obstetrically or generally infected are admitted to this unit and dealt with there.

Other Departments

Laboratories are numerous, and there is every facility for rapid and efficient testing in immediate conjunction with the clinical work. In the Chicago Lying-in Hospital there is a small clinical laboratory on each floor, and in all the hospitals there is a main clinical laboratory as well as a biochemical laboratory and a morbid anatomy laboratory. These are all very fully staffed by trained female technicians and controlled by a pathologist or biochemist. The routine is to cut all sections in wax and to mount a number from each specimen. Biochemical research as well as routine work is carried out.

The sterilising departments are unusually interesting at the Chicago Lying-in Hospital. Theatre sterilising is of course carried out on the main theatre floor. There is, however, a basement department under the control of a specially trained sister which deals with all materials necessary for the wards. Here drums containing dressings and the like are sterilised, and cupboards containing rows of shelves are specially provided for the reception of materials which may be needed at any moment in the wards. Sterilised linen parcels containing trays with all the necessities for dressings, gastric lavage sets, intravenous sets, and materials for vaginal examination—any of these will be sent up by the special elevator as soon as a telephone message is received. Numerous sealed, labelled, and dated flasks of saline solution of varying sizes and strength and of Ringer's solution are likewise kept in readiness in this department.

The infants' nurseries and kitchens are of uniform type. The infants are kept in single cribs or groups of four mounted on rubber-wheeled trollies in a centrally placed nursery, of which each ward floor has one. The nursery has a glass front abutting on to the corridor and a small section which may be raised for conversation between the sister and anyone in the corridor. The infants' kitchen adjoins the nursery, and each infant has its own tray bearing its own appliances.

The infants are wheeled into the wards for feeding only. The mother is taught the special care of the hands and breasts and handles her baby only at this time. After feeding, it goes back at once to the nursery. The patient's husband and friends are not allowed to touch it while it is in the hospital; they view it through the glass wall of the nursery. Incidentally no child under the age of fifteen is allowed to visit the patient. Apparently the public are quite used to these regulations and appreciate their significance.

An isolation nursery comprised of four or five small single rooms is provided for those suspected of infection.

A doctor's rest room is always provided. This is placed on the delivery floor and is furnished as a bed-sitting room with adjoining shower and bath. Here the obstetrician may rest during the time he is engaged upon a case of labour in the hospital.

Record-keeping

The hospital records are most scrupulously kept. A large staff of clerks is engaged for the purpose and special departments allotted.

At the Royal Victoria Hospital, Montreal, all the case-sheets, out-patient notes, &c., are collected when the patient is discharged and a summary of them is typed separately and filed. Later these are bound according to dates.

The Chicago Lying-in Hospital has separate elaborated note-sheets for the antenatal clinic, which comprises history, physical examination, obstetrical and progress sheets, as well as a special one for urine examination and blood examination. A detailed record sheet containing all possible subdivisions of the pathological states of the various systems is used and those appertaining to the particular patient marked off. Ward note-sheets are separate for the obstetric admission record, labour progress record, mother record, mother and child's identification record, and nursing record.

In the New York Hospital I was struck by the pathological record system. All specimens are kept for a minimum of five years (in case of legal difficulties). Large cabinets filled with trays of slides are placed in conjunction with bound files containing the pathological notes. A card-index system at once reveals the number of the gross specimen and slide connected with the pathological notes. It also shows the number of the associated clinical notes in the clinical record office. In a matter of minutes therefore—as was demonstrated to me—all the notes with the specimens and slides can be obtained in any case which has been operated upon during the last five years. At the end of this time certain discards are made, but many specimens are kept longer. Naturally adequate room and staff is necessary for records such as this to be kept.

The Chicago Lying-In Hospital keeps a large ribbed felt board in the resident's sitting-room upon the surface of which is registered day by day the statistics of the work done. Monthly and yearly records are photographed and filed.

Details and Impressions

In this communication I have tried to indicate what seemed to me the salient features of these large American hospitals. One cannot help but leave them with impressions so numerous as to be almost kaleidoscopic.

A number of minor arrangements appealed to me greatly. The honorary has his own private study in the hospital where he may retire in peace to conduct his correspondence or to interview visitors to the hospital. Assistants are numerous and well trained—occasionally permanent. The details are thought of and carried out for the operator; the energy output in operating is, therefore, much less than with us. Again, it was pleasant to find that close collaboration with the university faculties is maintained.

Many details, though interesting, did not attract me so much. A special oxygen room is provided in the Passavant Hospital, Chicago, in which cardiac or pneumonia cases are placed at high expense. An electrically controlled water-heating apparatus is part of the infant nursery in the St. Mary's Hospital. This ensures an immediate flow of water, heated to any required temperature, by turning an indicator on a dial. During delivery in the lithotomy position at the Passavant Hospital any blood lost runs down a metal channel into a receiver below the table. This is fitted with a plunger which registers on a vertical manometer fitted to the table the amount of hæmorrhage. This factor is correlated with the state of the blood pressure.

The nursing staff appear to enjoy a higher status than in this country. Floor supervisors correspond to ward sisters. The individual task is more highly specialised.

The cafeteria system is used for nurses' meals. Patients' meals are sent in bulk from the main kitchens to floor "serveries," where carving and distribution is carried out. The service is therefore good.

Finally, I trust that in setting down these notes I have not inadvertently conveyed the impression of dissatisfaction with our own maternity hospitals

in so far as I know them. The majority of these are old and financially limited, whereas some of the work in America is done under wellnigh ideal conditions. But possibly advantages spring from the necessity to make the best of circumstances, and it may be that we in this country are compensated by the development of a kind of sixth sense which makes up for other deficiencies, in our routine and operative work at any rate.

APPLICATIONS OF PSYCHOLOGY TO MEDICINE

PSYCHO-ANALYSIS and psychotherapy in general were the subject of an address given by Dr. William Brown, Wilde reader in mental philosophy in the University of Oxford, at a meeting of the Blackpool division of the British Medical Association on Nov. 13th.

Dr. Brown began his lecture by explaining that he himself was not a Freudian but had used the Freudian method among others for over twenty years. At the same time psycho-analysis, a treatment which might extend to 60 or 100 hours or more, could not be afforded by many patients, and in his view, despite the fact that orthodox Freudians threw up their hands at the idea of suggestion treatment, there was no necessary conflict between the full analysis and "short-cut" methods in the same field of psychotherapy. Admittedly the long Freudian analysis was the counsel of perfection, but, short of that, much could be done by suggestion methods, perhaps aided by hypnosis, to create self-confidence, to resolve difficulties, and to give to the patient a clearer view of the situation at the conscious level. The lecturer parted company with Freud in the matter of religion. He agreed that in the deep analysis aiming at liberation of repressions it was necessary to be very careful in applying religious methods to the cure of mental conditions, because they might intensify the sense of guilt—by no means the same thing as guilt itself—and thus help to reinstate the repression. But of the value of religion in assisting the patient to a deeper philosophy of life and a more complete integration of the mind he had no doubt, and he deplored the fact that Freud, who had done so much to increase the freedom of the human spirit, should be such an uncompromising opponent of religion; for it was religion taken in its widest sense, that justified the established belief in ultimate freedom and spiritual destiny.

Explaining the analytic theory and method Dr. Brown said that in analysis the patient lay passive, usually out of the sight of the physician, who encouraged him to talk out for an hour at a time the things which came into his mind. In this way mental tendencies below the threshold of consciousness had an opportunity to show themselves. Ordinarily these were repressed by what Freud originally called the "censorship" and now the "super-ego." The process of analysis was misinterpreted if it was regarded as a dragging of the unconscious into the conscious. In fact the unconscious was always trying to become conscious, and was customarily held back by the activity of the super-ego; but it managed to assert itself, though in a disguised form, when the mind was weakened through general disease, mental shock, or sustained mental conflict. It also emerged, again usually disguised, in the dream state. The scientific psychological treatment was to relieve these repressions, encouraging the tendencies out into the open under the special conditions of analysis, where they could be dealt with by the rational mind, and their energies sublimated for higher social and cultural ends.

The psycho-analyst had often to be for a time to his patient a mother-substitute or father-substitute, or both. This was where the analytical method became very exacting. There were transferred to the physician the early emotional tendencies of the patient. One of the differences, by the way, between Freud's method and the method of Jung, which was only to a small extent of a psycho-analytic nature, was that Jung held that transference should not occur. But no one could use the Freudian method without being intensely impressed by the fact of transference. The physician must be careful not to be caught up into counter-transference, or to resent his patient's vagaries, and if he was to be free from complexes himself, and to hold up to his patient an undistorting mirror, he himself must be analysed. A careful self-analysis would serve to some extent, but it was essential that it should be preceded by analysis from someone else. After this the analyst could proceed along the lines of self-analysis, to a great extent through his dreams, the systematic study of which was the best way of working out a "psycho-analytic autobiography."

THE MEDICAL PRACTITIONER AS PATRIOT

Prof. Morelli, secretary of the Fascist Syndicate of Doctors, has sent to all members of the Italian medical profession a circular which starts by saying that, in the circumstances of the moment, all doctors must consider themselves mobilised. It points out the opportunities that fall to the doctor, who visits the houses of all classes, to give encouragement in the sacrifices and privations that are necessary if Italy is to be victorious in the economic war. Nothing should be bought from the opposing nations, and here it is especially to the women that appeal must be made. "When," writes Prof. Morelli, "called by their sufferings, we cross their bedrooms, full of powders, paints, soaps, and toilet preparations, all coming from abroad, we must cry to them that this is a crime against the country and against her soldiers."

An "auto-train of defence against air and chemical warfare" has been fitted out for the purpose of giving practical demonstrations of the means of resistance to air and chemical attack. It was due to leave Rome last month and to visit, as rapidly as possible, the whole of Italy.

"IT ALL DEPENDS . . ."

NOWADAYS, when more and more parents are taking a theoretical as well as a practical interest in education, especially of the very young, they tend to pool experience and seek help in study groups under expert guidance. To meet the need of such groups the Home and School Council of Great Britain has republished in book form[1] some articles originally printed in their official organ *Parents and Teachers*. The articles deal with such qualities as confidence, helpfulness, dependability, and thoroughness, which are treated not as moral virtues but rather as qualifications for citizenship. On the other side of the picture attributes like fear, cruelty, stubbornness, and jealousy are shown to be avoidable handicaps which greatly hamper a child's relationship with its fellows. An intermediate chapter on rewards and punishments discusses the—often mistaken—means by which adults try to encourage the desirable and avoid the undesirable elements in children. Dr. H. Crichton-Miller writes a foreword and other medical contributors include Dr. E. A. Bennett, Dr. Henry Wilson, Dr. E. A. Hamilton-Pearson, the late Dr. Ian Suttie, Dr. Emanuel Miller, and Dr. Grace Calver. Mr. G. W. Lyward, director of the Finchden Manor Clinic and School, Tenterden, expresses sympathy with the irritation felt by parents—and not confined to parents—at the refusal, or inability, of lecturers on psychology to answer specific questions based on personal problems. "It was so exasperating, my dear, I quite hoped that he would tell me what to do, and instead he asked me about myself and the other children." Too often, in short, the answer starts "It all depends. . . ." But, as Mr. Lyward points out, most lectures and all these articles are but different ways of expressing one

[1] Advances in Understanding the Child. Compiled by the Home and School Council of Great Britain, 29, Tavistock-square, London, W.C.1. 1935. Pp. 71. 1s.

or two simple things, and it is upon these simple things that "it all depends": notably that certain qualities are not natural to a child at a certain stage of development and that the time factor must never be forgotten. It is, for example, unlikely to be disputed that helpfulness is not natural to any small child, but it is not always realised that there may be ages at which it is not natural to be truthful, brave, polite, or grateful. To give respect to the child, that is, to give respite, to take time into account, is the lesson here set out; and in this small book will be found practical help in the interpretation of the child's attitude at various stages of its development.

NEITHER JEW NOR GENTILE

A CORRESPONDENT writes: "The sympathetic reference in your last issue to the plight of the Jewish doctor in Germany was in my mind when, opening at random the anthology 'For and Against Doctors' compiled by Dr. Robert Hutchison and Dr. G. M. Wauchope,[1] I came across the following apposite quotation: 'By his commission the physician is sent to the sick, and knowing in his calling neither Jew nor Gentile, bond or free, perhaps he alone rises superior to those differences which separate and make us dwell apart, too often oblivious to the common hopes and frailties which should bind us together as a race. In his professional relations, though divided by national lines, there remains the feeling that he belongs to a guild which owes no local allegiance, which has neither king nor country, but whose work is in the world.' This comes from William Osler's 'Counsels and Ideals' (London, 1921, second edition, p. 73). The feeling to which it gives expression is no less strong to-day."

Vacancies

For further information refer to the advertisement columns

Albert Dock Hospital, Connaught-road, E.—Res. M.O. At rate of £110.

Bethnal Green Hospital, Cambridge-road, E.—Asst. M.O. £250.

Birmingham, Queen's Hospital.—Res. Surg. O. £150.

Bolton Royal Infirmary.—Asst. Pathologist. £600. H.P. £200. Also H.S. £125.

Bournemouth, Royal National Sanatorium for Consumption, &c. Asst. Res. M.O. £200.

Brighton Education Committee.—Asst. School M.O. and Asst. M.O.H. £500.

Brighton, Royal Sussex County Hospital.—H.S. Also Cas. H.S. £150 and £120 respectively.

Central London Throat, Nose, and Ear Hospital, Gray's Inn-road, W.C.—Hon. Third Asst. for Out-patient Dept.

Chester Royal Infirmary.—H.S. £150.

Chesterfield and North Derbyshire Royal Hospital.—H.A. At rate of £150.

City of London Hospital for Diseases of the Heart and Lungs, Victoria Park, E.—Walton Marsh Barnes Research Scholarship, &c. £500. Res. M.O. £250. Also H.P. At rate of £100.

Colchester, Essex County Hospital.—Sen. H.S. £175.

Croydon General Hospital.—H.P. £125.

Dreadnought Hospital, Greenwich, S.E.—H.P. and H.S. Each at rate of £110.

East Ham Memorial Hospital, Shrewsbury-road, E.—H.S. to Special Depts. and Cas. O. At rate of £120.

Eastern Dispensary, Leman-street, E.—Two Physicians.

Edinburgh, Royal College of Physicians.—Kirk Duncanson Fellowship for Med. Research. £300.

Egyptian Government.—Principal M.O.H. of Cairo. L.E. 840–984. Also Director, Serum and Vaccine Institute, Cairo. L.E. 840–984.

Elizabeth Garrett Anderson Hospital, Euston-road, N.W.—H.P., three H.S.'s. Also Obstet. Surgeon. Each £50.

Evelina Hospital for Sick Children, Southwark, S.E.—Third Anæsthetist to Aural and Dental Depts. 50 guineas.

Gloucestershire Royal Infirmary.—H.S. At rate of £150.

Golden-square Throat, Nose, and Ear Hospital, W.—H.S. £100.

Halifax General Hospital.—Jun. Res. M.O. £250.

Hampstead General and N.W. London Hospital, Haverstock Hill, N.W.—H.S. At rate of £100.

Herefordshire General Hospital.—Hon. Anæsthetist. Also Hon. Radiologist.

Highgate Hospital, Dartmouth Park Hill, N.—Asst. M.O. £250.

Hospital for Sick Children, Great Ormond-street, W.C.—Res. H.P. Also Res. H.S. Each at rate of £100.

Hospital for Tropical Diseases, Gordon-street, W.C.—H.P. At rate of £120.

Hospital for Women, Soho-square, W.—Res. M.O. At rate of £100.

Huddersfield, St. Luke's Hospital.—Res. M.O. £200.

Hull Municipal Maternity Home and Infants Hospital.—Jun. Res. M.O. At rate of £100.

Ilford, King George Hospital.—Two H.P.'s and three H.S.'s. Each at rate of £100.

India, Women's Medical Service, Countess of Dufferin's Fund.—Vacancies.

Inverness, Royal Northern Infirmary.—Bacteriologist and Pathologist. £800.

Ipswich Mental Hospital.—H.P. £150.

Kettering and District General Hospital.—Res. M.O. At rate of £200.

King's College, Denmark Hill, S.E.—Asst. Hon. Anæsthetist. Also Res. Radiologist.

Kirbymoorside, Yorkshire Children's Orthopædic Hospital.—H.S. At rate of £150.

Leeds Public Dispensary and Hospital.—Cas. O. and H.S. Also H.P. Each at rate of £150.

Liverpool, Women's Hospital, Catherine-street.—H.S. At rate of £100.

Manchester Northern Hospital.—H.S. At rate of £100.

Marie Curie Hospital, 2, Fitzjohn's-avenue, N.W.—Res. M.O. At rate of £100.

Middlesex County Council.—Visiting Dental Surgeon. £2 2s. per session.

Middlesex Hospital, W.—M.O. for Dept. of Radio-Therapy. £1200. Also Bernhard Baron Research Studentship. £300.

Mile End Hospital, Bancroft-road, E.—Asst. M.O. £350.

National Hospital for Diseases of the Nervous System, Queen-square, W.C.—Two H.P.'s. Each £150. Also Visiting M.O. for Convalescent Home.

Newcastle General Hospital.—Two H.S.'s. Each at rate of £150.

Northumberland County.—Sen. Tuber. O. £1000.

Norwood Hospital for Children, Elder-road, S.E.—Asst. M.O. £250.

Nottingham City.—Asst. M.O. for Maternity and Child Welfare Work. £500.

Nottingham General Hospital.—H.P. At rate of £150.

Nottingham Hospital for Women.—H.S. At rate of £150.

Oldham, Boundary Park Municipal Hospital.—Res. Asst. M.O. At rate of £200.

Oldham Royal Infirmary.—Orthopædic Surgeon to Fracture Clinic. H.S. to Spec. Depts. At rate of £175.

Oswestry, Robert Jones and Agnes Hunt Orthopædic Hospital.—Res. Surg. O. £350.

Plymouth, Mount Gold Orthopædic and Tuberculosis Hospital.—Asst. Res. M.O. £350.

Plymouth, Prince of Wales's Hospital, Greenbank-road.—Res. Surg. O. At rate of £225. Also H.S. At rate of £120.

Poplar Hospital for Accidents, East India Dock-road, E.—Second Res. O. £175.

Preston, County Mental Hospital, Whittingham.—Res. Jun. Asst. M.O. £500.

Princess Elizabeth of York Hospital for Children, Shadwell, E.—Res. M.O. £200. H.S. Also Cas. O. Each at rate of £125.

Queen Mary's Hospital for the East End, Stratford.—Res. M.O. and 2 Cas. and Out-patient Officers. Each at rate of £150. Also 2 H.S.'s, H.P., Obstet. H.S., also Res. Anæsthetist and H.P. Each at rate of £120.

Queen's Hospital for Children, Hackney-road, E.—H.P. and Cas. O. Each at rate of £100.

Radium Institute, Riding House-street, W.—H.S. At rate of £150.

Royal Free Hospital, Gray's Inn-road, W.C.—Second H.S., Surg. Reg. £200. Res. Cas. O. At rate of £150. Dist. Obstet. Asst., Gynæcological Reg.; also Med. Reg. Each at rate of £100, and Res. Anæsthetist in Obstet. and Gyn. Unit at rate of £75.

Royal Northern Hospital, Holloway, N.—Second Ophth. Surgeon.

Royal Waterloo Hospital for Children and Women, Waterloo-road, S.E.—H.S. At rate of £100. Also Hon. Clin. Asst.

St. Charles' Hospital, St. Charles'-square, W.—Asst. M.O. £250.

St. George-in-the-East Hospital, Raine-street, E.—Asst. M.O. £250.

St. Mary's Hospital for Women and Children, E.—Hon. Anæsthetist.

St. Olave's Hospital, Lower-road, Rotherhithe, S.E.—Asst. M.O. £250.

Salford, Infectious Diseases Hospital.—Jun. Asst. Res. M.O. £200.

Staffordshire General Infirmary.—H.S. At rate of £200.

Swansea General and Eye Hospital.—Res. Anæsthetist. £150.

Talgarth, Breconshire Mid-Wales Counties Mental Hospital.—Asst. M.O. £400.

Tunbridge Wells, New Kent and Sussex Hospital.—Cas. O. and H.S. to Fracture Clinic. £150.

Warwickshire County Council.—Asst. County M.O.H. £500.

West Bromwich, Hallam Hospital.—Res. H.P. At rate of £200.

Westminster Hospital, Broad Sanctuary, S.W.—Hon. Clin. Asst.

Medical Referees under the Workmen's Compensation Act, 1925: 1. General Medical Referee (Surgeon) for the Midlothian and Peebles Districts of the Sheriffdom of the Lothians and Peebles. 2. Ophthalmic Specialist Medical Referee for the Sheriffdoms of Fife and Kinross, the Lothians and Peebles, and Stirling, Dumbarton, and Clackmannan. Applications should be addressed to the Private Secretary, Scottish Office, Whitehall, London, S.W.1, before Dec. 9th.

[1] This anthology is noticed on another page.—ED. L.